DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

GHQ/SCAP Records (RG 331, National Archives and Records Service)

Description of contents

(1) Box no. 2989

(2) Folder title/number: (10)
Mitsubishi Denki K.K. - Fukuyama Kojo

(3) Date: Mar. 1946 - May 1951

(4) Subject:

Classification	Type of record
9617, 9621	c, e, r

(5) Item description and comment:
i) Hiroshima
ii) Includes "Effects which the Romoval of Steam Power-Plants Specified for Reparation ..."

(6) Reproduction: Yes No

(7) Film no. Sheet no.

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DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

INSPECTION REPORT

Field Trip Report - Mr. Nelson 14 May 1951

(9) **Mitsubishi Denki K.K., Fukuyama City**

The plant produced 39,000 pieces of watthour meters in April 1951 as compared with 30,000 pieces during the corresponding period last year. This means an increase of 90% in production during the past one year.

"Mitsubishi Electric Mfg. Co., Ltd., Fukuyama Factory, May 9, 1951" is in our file.

Mr. Watanabe, deputy manager, reports that owing to lack of money and resultant few orders on the part of the Haiden Company the plant is on the verge of overproduction. Shortages of nickel and cobalt are problems. There is a total of 934 employees and no labor trouble is in sight. Labor contract will expire in October 1951. Conferences with a few employees who attended TWI and STC courses have revealed that appreciable good results are taking place in the plant.

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Mitsubishi Electric Mfg. Co., Ltd.,

Fukuyama Factory

May. 9, 1951

PLANT INDUSTRY
FILE # 551

Plant Info

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

A. Brief history:

The Fukuyama Factory of the Mitsubishi Denki K. K. was erected as one of the branches of the Kobe Works of the same company in Feb. 1943, with factory buildings bought from a cotton spinning company and machinery transfered from the said works.

Since its establishment, it was engaged in the manufacture of electrical accessories for aireraft.

As the production was upped, we found the factory buildings too small, with the result that we started the construction of new factory buildings in the suburbs of the Fukuyama City in 1944.

From its very start, the production of the factory went on very smoothly and kept on mounting until August 1945, but just a week before the termination of war all the factory buildings were reduced to ashes in the fire caused by the air-raid.

After the termination of hostilities, all machines and equipments which survived the air-raid were transfered to the factory buildings then nearing completion.

In Feb. 1946, our reconversion to civilian commodities production was authorized by G H Q.

Since our reconversion we were engaged in the manufacture of electrical equipments for automotives, watthour meters, and other electrical meters, But now watthour meters are our only product, with the production of other products transfered to our mother factory in Kobe in 1949.

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B. Organization:

Manager S. Miyama

Assistant Manager S. Watanabe

General Affairs Sec.

Accounting Sec.

Labor Sec.

Sales and Purchasing Sec.

Engineering Sec.

Manufacturing Sec.

C. Site and Buildings:

1. Site area	120,046 m^2
2. Floor space	20,538 m^2
Manufacturing floor space	15,321 m^2
Warehouse floor space	2,088 m^2
Office and etc. floor space	3,128 m^2
3. Welfare facilities	4,920 m^2

D. Machinery and Equipment

1. Machine tool:	439
Lathe	205
Drilling machine	49
Grinding machine	63
Milling machine	52
Gear cutting machine	23
Slotting machine	2
Shaping machine	10
Others	35
2. Industrial machine:	404
Air hammer	2

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Press	35
Stamping machine	56
Winding machine	18
Hearth	36
Tumbler	16
Spot welder	11
Others	230

E. Employe:

1. Number

	Male	Female	Total
Salaried employe	163	28	191
Clerk	80	28	108
Engineer	83	-	83
Waged employe	495	248	743
Total	658	276	934

2. Absenteeism

	Male	Female	Total
Salaried employe	2.0%	2.4%	2.1%
Waged employe	1.8%	2.8%	2.2%
Total	1.9%	2.8%	2.2

3. Average monthly wage or salary

	Male	Female	Total
Salaried employe	13,915yen	7,108yen	12,912yen
Waged employe	8,591	5,552	7,555
Total	9,888	5,703	8,623

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F. Production

1. Name of products.

(a) Watthour meter

Single phase

Three phase

(b) Potential transformer (for watthour meter)

(c) Current transformer (for watthour meter)

2. Actual and estimated production

Refor to Table 1

3. Per capita production

Oct.'50	Nov.	Dec.	Jan.'51	Feb.	Mar.
yen 54,800	yen 57,200	yen 59,080	yen 58,850	yen 56,200	yen 62,600

G. Export

Contrary to our expectation, the export of our products had been at a low ebb ever since our reconversion and had made us pessimistic over the future. But the entire picture was changed during the last few months.

Orders began to come in one after another from Far Eastern countries, and now we are no doing a considerably good business in this field. This favorable trend can be attributable to the popularity of our products on foreign markets. Our recent exports are shown below:

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Export item	Quantity (piece)	Value (¥1000)	Agent	to	Delivery date
WHM 1Ø	6,000	8,400	Kiko Trading Co.	North China	2 Sep.'50
"	400	560	Matsushita Trading Co.	Bangkok	11 Sep.'50
WHM 3ø	1	14	Kiko Trading Co.	Okinawa	20 Sep.'50
WHM 1ø	300	450	"	Bangkok	20 Oct.'50
"	300	450	Kowa Trading Co.	"	"
WHM 3ø	400	1,490	Toko Trading Co.	North China	21 Oc.'50
"	4	33	Nikkyo Sangyo	"	24 Oct.'50
WHM 1ø	100	150	Matsushita Trading Co.	Bangkok	5 Nov.'50
"	15	52		"	7 Nov.'50
"	750	1,215	Kiko Trading CO.	"	10 Nov.'50
WHM 3ø	969	9,875	"	North China	12 Nov.'50
"	294	4,582	"	"	5 Dec.'50
"	100	373	"	"	12 Dec.'50
WHM 1ø	1,720	1,490	Midoriya Electric CO.	Bangkok	20 Dec.'50
"	5,200	7,894	Kiko Trading Co.	Formosa	28 Dec.'50
WHM 3ø	35	149	Yutoku Trading Co.	Tsingtao	15 Jan.'51
WHM 1ø	250	377		Formosa	20 Jan.'51
"	4,500	6,945	Seiwa Trading Co.	"	15 Jan.'51
"	1,400	2,104	Yutoku Trading Co.	Bangkok	20 Jan.'51
"	1,000	1,545	Seiwa Trading Co.	Formosa	5 Mar.'51
"	400	7,607	Matsushita Trading Co.	Bangkok	20 Mar.'51
"	50	75		Formosa	30 Mar.'51

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H. Development

1. Thermal demand meter:

Third trial manufacture is now in progress and real manufacture weel be expected in June.

2. Var-hour meter for balanced voltage circuits:

Second trial manufacture was completed recently with good result, and real manufacture is now in progress.

3. Var-hour meter for unbalanced voltage circuits:

The result of the first trial manufacture was unsatisfactory, and another trial manufacture is planned.

I. Labor Union

The labor union of this factory was formed in Feb. 1946. Ever since its foundation, it was so moderate that any labor trouble worth mentioning has never cropped up.

It is neither affiliated with any political party, nor under the influence of any radical elements.

It was not affected by the so-called "re-purge" effected in our company last October.

End

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Actual and Estimated Production

Table 1

(In ¥1,000)

		Actual		Estimated			
		Jan '51	Feb '51	Mar '51	Apr '51	May '51	Jun '51
Watt-hour Meter	1 ø	(32,000) 40,736	(32,800) 43,660	(31,500) 41,909	(32,800) 42,887	(33,000) 43,130	(33,000) 43,130
	3 ø	(3,600) 12,037	(2,000) 7,250	(3,900) 13,940	(3,000) 11,030	(3,000) 10,686	(3,000) 10,686
	Total	(35,600) 52,773	(34,800) 50,910	(35,400) 55,849	(35,800) 53,917	(36,000) 53,816	(36,000) 53,816
Parts for WHM		1,794	679	1,775	3,532	1,000	1,000
P T		(112) 336	(156) 468	(171) 516	(312) 790	(300) 700	(200) 700
G T		(368) 773	(239) 574	(202) 424			
Total		55,675	52,630	58,565	58,139	55,516	55,516

Remark : Figures put in parentesis show the number of products.

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FIELD TRIP REPORT

R.G. STRADLEY

Fukuyama
27 July 1950

1. Purpose:

Inspection of Mitsubishi Denki K.K.

2. Background:

Surveillance in accordance with O.D.11.

3. Discussion:

Conferees,

Mr. Watanabe, Asst Manager, and his staff.

Detailed reports on the history, organization, machinery and equipment, employees, production export (actual and estimated status), actual and estimated production are in our file.

The plant is operating almost 100% on the basis of its equipment and facilities.

Power situations:

	June 1950	July 1950
Allocation	87,000 KWH	84,000 KWH
Consumption	85,300 KWH	94,000 KWH

The company has been consulting with Mr. Kojima of Hiroshima Branch of MITI for adjustment.

4. Conclusion:

No particular problems were in evidence.

The company's absenteesim percentage of 1.9% is excellent which is attributable to the good welfare facilities and type of work in the plant.

5. Recommendations:

It was recommended to Mr. Watanabe that in view of the water shortage in summer season in Fukuyama City proper measures be taken for fire prevention in the plant.

RGS

R. G. STRADLEY
Chief, Price, Distribution
and Industry Division

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

Outline of Mitsubishi Electric Mfg. Co., Ltd.,

Fukuyama Factory

July 26, 1950

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

A. Brief history:

The Fukuyama Factory of the Mitsubishi Denki K. K. was erected as one of the Branches of the Kobe Works of the same company in Feb. 1943,with the factory buildings bought from a cotton spinning company and machineries transfered from the said works.

Since its establishment, it was engaged in the manufacture of electrical accessories for aircraft.

As the production was upped, we found the factory buildings too smallm with the result we started the construction of new factory buildings in the suburbs of the Fukuyama City in 1944.

From its very start, the production of the factory went on very smoothly and kept mounting until August 1945, but just a week before the termination of war all the factory buildings were reduced to ashes in the fire caused by the air-raid.

After the termination of hostilities, all machines and equipments which survived the air-raid were transfered to the factory buildings then nearing completion.

In Feb. 1946, our reconversion to civilian commodities production was authorized by G H Q.

Since our reconversion we were engaged in the manufacture of electrical equipments for automotives, watthour meters, and other electrical meters. But now watthour meters are our only product, with the production of other products transfered to our mother factory in Kobe last year.

B. Organization:

Manager S. Miyama

Assistant Manager S. Watanabe

General Affairs Sec.

Accounting Sec.

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Labor Sec.

Sales and Purchasing Sec.

Engineering Sec.

Manufacturing Sec.

C. Site and Buildings:

1. Site area	120,046m²
2. Floor space	18,607m²
Manufactring floor space	15,290m²
Warehouse floor space	1,404m²
Office and etc. floor space	1,913m²
3. Welfare facilities	4,920m²

D. Machinery and Equipment:

1. Machine tool:	488
Lathe	241
Drilling machine	52
Grinding machine	65
Milling machine	61
Gear cutting machine	22
Slotting machine	2
Shaping machine	10
Others	35
2. Industrial machine	370
Air hammer	2
Press	37
Stamping machine	46
Winding machine	22
Hearth	36
Tumbler	13
Spot welder	11
Others	203

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June 500 July
87,000 al 84,000 al
85,300 94,000 C

E. Employe:

1. Number

	Male	Female	Total
Salaried employe	158	15	173
Clerk	80	16	95
Engineer	78	-	78
Waged employe	502	279	781
Total	660	294	954

2. Absenteeism

	Male	Female	Total
Salaried employe	2.2%	6.2%	2.6%
Waged employe	2.1%	1.2%	1.8%
Total	2.1%	1.2%	1.9%

3. Average monthly wage or salary

	Male	Female	Total
Salaried employe	13,950 Yen	8,360 Yen	13,500 Yen
Waged employe	8,640	5,320	7,475
Total	9,940	5,510	8,580

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F. Production:

1. Name of products

(a) Watthour meter

Single phase

Three phase

(b) Potential transformer(for watthour meter)

(c) Current transformer (")

2. Actual and estimated production.

Refer to Table 1

3. Per capita production.

Jan'50	Feb'50	Mar'50	Apr'50	May'50	Jun'50
yen	yen	yen	yen	yen	yen
55,591	47,639	47,185	46,100	50,870	57,420

G. Bottleneck:

The greatest trouble until about last Oct. was the poor sale, but owing to the hike of the electric charge this trouble no longer exists to-day. Now there is no bottleneck particular, except the difficuity to getting necessary funds.

H. Export:

Recent production is almost 100% of the productive capacity, but almost all products have been sold on domestic market.

About two years ago we expected much of the export to Far Eastern countries. However, actual showings fell far short of our expectation.

Products so far exported are only a fraction of our total production.

Countries, to which we exported our products, are Formosa Communist China, and Siam.

As things stand to-day, increased export seems a slender possibility.

Actual and estimated exports are as follows:

Export item	To	Quantity	Value	Agent		Date of delivery
				Japanese	Foreign	
W H M 1 ϕ	Bankok	Units 100	Yen 150,500	Matsushita Trading Co.	National Trading Co.	Dec.1949
Parts for WHM	Formosa		275,400	Kanematsu Trading Co.	Formosa Electric	Jan. 1950
W H M 1 ϕ	Tientsin	2,200	3,240,000	Riko Trading co.	North China Import	Jun. 1950
W H M	Tientsin	3,000	4,800,000	"	"	Jul. 1950
W H M 3 ϕ	Tientsin	21	204,480	"	"	Jun. 1950
W H M 1 ϕ 3 ϕ	Tormosa	210	587,520	"	Dah Seng Hang	Jul. 1950
W H M 1 ϕ	Tientsin	6,000	8,400,000	"	North China Import	Sep. 1950

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DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

I. Labor Union

The labor union of this factory was formed in Feb. 1946. Ever since its foundation, it was so moderate that any labor trouble worth mentioning has never cropped up. The union remains neutral and is not affiliated with any political party.

The membership of the union is 840.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

FIELD TRIP REPORT

R.G. STRADLEY

12 May 1950
Fukuyama

1. Purpose:

Inspection of Mitsubishi Denki K.K.

2. Background

Surveillance in accordance with O.D. 11.

3. Discussion:

Conferees, Mr. Watanabe, Vice-President and another.

a. As for data on Production and other details, see "Mitsubishi Electric Mfg. Co., Ltd., Fukuyama Factory, May 11, 1950" which is in our file.

b. Electric power:

Month 1950	Allocation	Supplementary Allocation	Consumption
January	33.377 KWH	7,000 KWH	85,700 KWH
February	77,310	-	85,600
March	68,480	4,000	92,500
April	74,000	-	84,350

c. Coal:

Month 1950	Classification	Consumption	Price	Calory
January	A. Medium Size	15 ton	¥ 4,750	Over 6500 cal
	B. Powdered	15	¥ 4,750	(Kyushu Coal)
February	A.	12	"	"
	B.	13.5	"	"
March	A.	13.5	"	"
	B.	15	"	"
April	A.	13	"	"
	B.	15	"	"

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d.

Capital	Face Value	Market Value	Dividend
¥ 1,200,000,000	¥ 50	¥ 48 - ¥ 50 (12 May 50)	None 1949 8% 1950

4. Conclusions:

Due to the enforcement of the new electric power rates the company is being kept busy for the production of watt hour meters. Quality control is carefully studied and actually being conducted in the plant. The company desires to have an American quality control expert throughly inspect the company's production process and give guidance and suggestion.

5. Recommendation:

None.

RGS

R.G. STRADLEY

D/RGS/fk

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

Mitsnfishi Electric Mfg. Co., Ltd.,

Fukuyama Factory

May 11, 1950

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

A. Brief history:

The Fukuyama Factory of the Mitsubishi Denki K. K. was erected as one of the branches of the Kobe Works of the same company in Feb. 1943, with the factory buildings bought from a cotton spinning company and machineries transfered from the said works.

Since its establishment, it was engaged in the manufacture of electrical accessories for aircraft.

As the production was upped, we found the factory buildings too small, with the result we started the construction of new factory buildings in the suburbs of the Fukuyama City in 1944.

From its very start, the production of the factory went on very smoothly and kept mounting until August 1945, but just a week before the termination of war all the factory buildings were reduced to ashes in the fire caused by the air-raid.

After the termination of hostilities, all machines and equipments which survived the air-raid were transfered to the factory buildings then nearing completion.

In Feb.1946, our reconversion to civilian commodities production was authorized by G H Q.

Since our reconversion we were engaged in the manufacture of electrical equipments for automotives, watthour meters, and other electrical meters. But now watthour meters are our only product, with the production of other products transfered to our mother factory in Kobe last year.

B. Organization:

Manager S. Miyama

Assistant Manager S. Watanabe

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

General Affairs Sec.

Accounting Sec.

Labor Sec.

Sales and Purchasing Sec.

Engineeaing Sec.

Manufacturing Sec.

C. Site and Buildings:

1. Site area 120,046 m²

2. Floor space 18,607 m²

Manufactring floor space 15,290 m²

Warehouse floor space 1,404 m²

Office and etc. floor space 1,913 m²

3. Welfare facilities 4,920 m²

D. Machinery and Equipment:

1. Machine tool: 527

Lathe	273
Drilling machine	55
Grinding machine	67
Milling machine	66
Gear cutting machine	22
Slotting machine	2
Shaping machine	11
Others	31

2. Industrial machine 393

Air hammer	2
Press	38
Stamping machine	48
Winding machine	22
Hearth	32
Tumbler	13
Spot welder	11
Others	227

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

E. Employe:

1. Number

		Male	Female	Total
Salaried employe		159	16	175
	Clerk	84	16	100
	Engineer	75	-	75
Waged employe		506	266	772
Total		665	282	947

(950 may 1949)

2. Absenteeism

	Male	Female	Total
Salaried employe	2.8%	6.9%	3.1%
Waged employe	2.6%	2.9%	2.7%
Total	2.6%	3.0%	2.8%

3. Average monthly wage or salary

	Male	Female	Total
Salaried employe	13,494 Yen	7,978 Yen	13,013 Yen
Wage employe	8,517	4,232	7,011
Total	9,715	4,474	8,109

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F. Production:

1. Name of products

(a) Watthour meter

Single phase

Three phase

(b) Potential transformer (for watthour meter)

(c) Current transformer (")

2. Actual and estimated production.

Refer to Table 1

3. Per capita production.

Nov'49	Dec'49	Jan'50	Feb'50	Mar'50	Apr'50
Yen	Yen	Yen	Yen	Yen	Yen
50,672	48,973	55,591	47,639	47,185	43,000

G. Bottleneck:

The greatest trouble until about last Oct. was the poor sale, but owing to the hike of the electric fee this trouble no longer exists to-day. Now there is no bottle-neck particular, except the difficulty of getting necessary funds.

H. Export

Recent production is almost 100% of the productive capacity, but almost all products have been sold on domestic market.

About two years ago we expected much of the export to Far Eastern countries. However, actual showings fell far short of our expectation.

Products so far exported are only a fraction of our total production.

Countries , to which we exported our products, are Formosa and Siam . As things stand to-day, increased export seems a slender possibility.

Actual export and estimated export are as follows:

Export item	To	Quantity	Value	Japanese Firm	Foreign Firm	Delivery date
W H M 1ϕ	Bankok	100	Yen 150,500	Matsushita Trading Co.	National Trading Co.	Dec.'49
Parts for W H M	Formosa		275,400	Kanematsu Trading Co.	Formosa Electric	Jan.'50
W H M 1ϕ	Tientsin	2,200	3,240,000	Riko Trading Co.	North China Inport	Jun.'50
W H M	"	3,000	4,800,000	"	"	Jul.'50
W H M 1ϕ, 3ϕ	Formosa	170	690,000	"		

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I. Labor Union

The labor union of this factory was formed in Feb. 1946. Ever since its foundation, it was so moderate that any labor trouble worth mentioning has never cropped up. The union remains neutral and is not affiliated with any political party.

The membership of the union is 840.

Toble 1

Actual and Estimated Production

(in 1,000 yen)

		Actual							Estimated				
		Oct'49	Nov'49	Dec'49	Jan'50	Feb'50	Mar'50	Apr'50	May'50	Jun'50	Jul'50	Aug'50	Sep'50
Watthour Meter	1 φ	(18,240) 22,164	(15,196) 18,138	(12,666) 15,544	(4,798) 5,687	(6,550) 7,667	(17,517) 20,880	(24,303) 28,915	(30,200) 35,601	(30,200) 35,601	(30,200) 35,601	(30,200) 35,601	(30,200) 35,601
	3 φ	(6,000) 20,521	(7,000) 23,999	(7,378) 24,902	(9,972) 35,767	(8,560) 31,233	(5,650) 18,186	(3,100) 9,861	(4,500) 15,775	(5,500) 18,945	(5,500) 18,945	(5,500) 18,945	(5,500) 18,945
	Total	(24,240) 42,686	(22,160) 42,138	(20,044) 40,446	(14,770) 41,454	(15,110) 38,900	(23,167) 39,066	(27,403) 38,776	(34,700) 51,376	(35,700) 54,546	(35,700) 54,546	(35,700) 54,546	(35,700) 54,546
Parts for WHM		—	713	1,247	5,572	534	86	93	—	—	—	—	—
CT		(10) 17	(145) 261	—	(95) 171	(360) 648	(300) 540	(611) 1,258	(590)	(590)	(590)	(590)	(590)
PT		(10) 22	(51) 112	—	—	(287) 411	(146) 321	(232) 626	1,122	1,122	1,122	1,122	1,122
Total		42,725	43,224	41,693	47,197	40,493	40,013	~~40,013~~ 40,753	~~40,953~~ 52,498	~~52,498~~ 55,668	55,668	55,668	55,668

Remark: Figures put in parentheses show the number of products.

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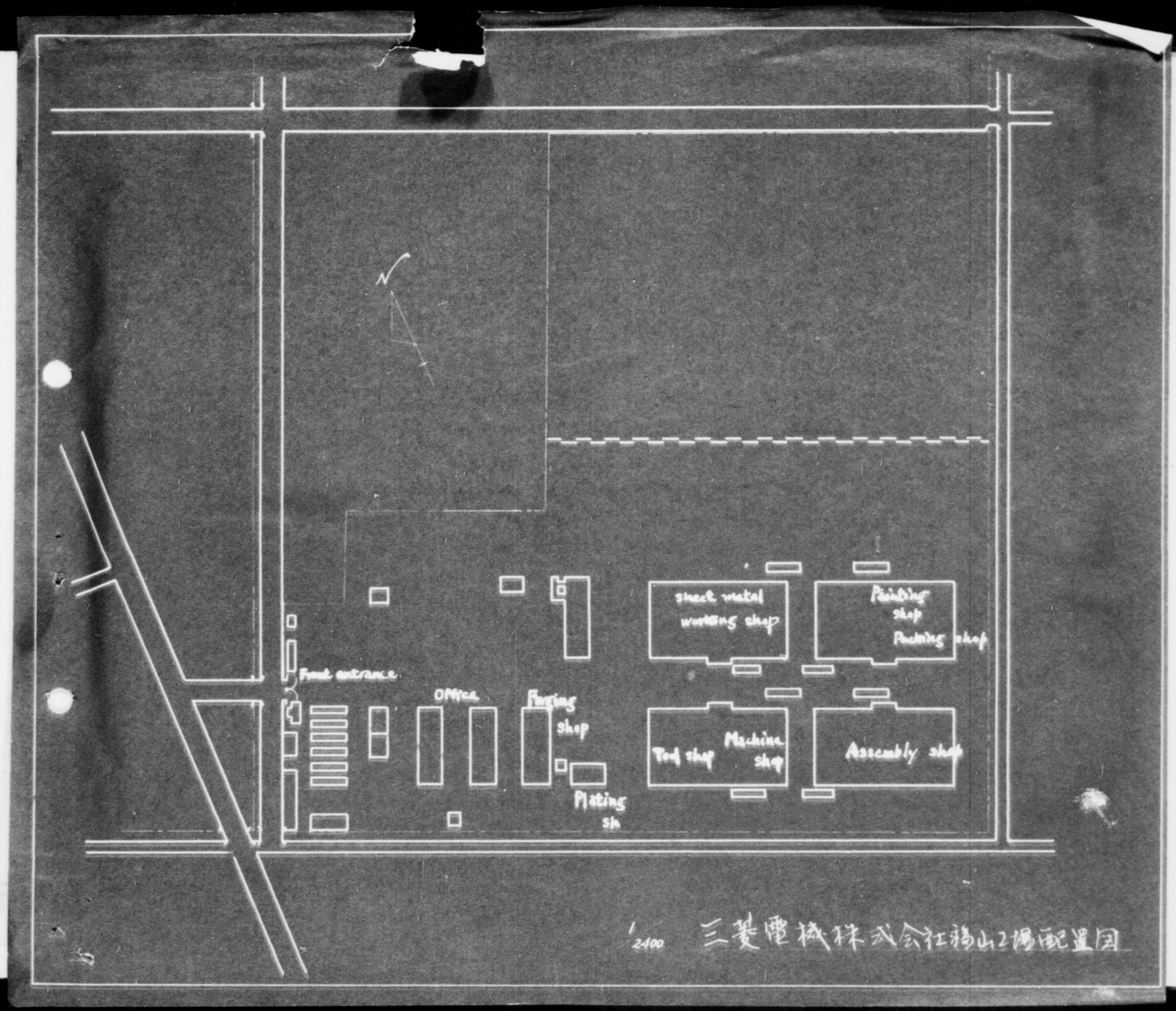
DECLASSIFIED E.O. 12065 SECTION 3-402/NRDC NO. 775013



DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

FIELD TRIP REPORT

R.G. STRADLEY

23 February 1950

1. Purpose:

Inspection of Mitsubishi Electric Co., Fukuyama Plant Hiroshima Prefecture.

2. Background:

Surveillance in accordance with O.D. 51.

3. Discussion:

Primary product of the Plant is electric meters.

Monthly production is 20,000 single phase meters and 5,000 three phases meters.

Potential and current transformers are produced to be attached to meters for high voltage electricity.

4. Conclusion:

Production lines process appeared to be well utilized.

5. Recommendation:

None.

RGS
R.G. Stradley.

D/RGS/st

Table 1 **Actual and Estimated Production** (in ¥ 1,000)

		Actual									Estimated		
		Oct. 1949	Nov. 1949	Dec. 1949	Jan. 1950	Feb. 1950	Mar. 1950	Apr. 1950	May 1950	Jun. 1950	Jul. 1950	Aug. 1950	Sep. 1950
Watthour Meter	1 φ	(18,240) 22,164	(15,196) 18,138	(12,666) 15,540	(4,798) 5,684	(6,550) 7,667	(17,517) 20,880	(24,303) 28,915	~~(34,510)~~ (30,800) 36,334	(34,510) 41,364	(30,200) 35,601	(30,200) 35,601	(30,200) 35,60
	3 φ	(6,000) 20,521	(7,000) 23,999	(7,378) 24,902	(9,972) 35,767	(8,560) 31,233	(5,650) 18,186	(3,100) 9,861	(2,500) 9,208	(3,000) 11,090	(5,500) 18,945	(5,500) 18,945	(5,500) 18,945
	Total	(24,240) 42,686	(22,160) 42,138	(20,044) 40,446	(14,770) 41,454	(15,110) 38,900	(23,167) 39,066	(27,403) 38,776	(33,300) 45,543	(37,510) 52,453	(35,700) 54,546	(35,700) 54,546	(35,700) 54,546
Parts for W H M		–	713	1,247	5,572	534	86	93	–	688	–	–	–
CT		(10) 17	(125) 261	–	(95) 171	(360) 648	(300) 540	(611) 1,258	(503) 1046	(426) 884	(590)	(590)	(590)
PT		(10) 22	(51) 112	–	–	(187) 411	(146) 321	(232) 626	(154) 416	(279) 753	1,122	1,122	1,122
Total		42,725	43,224	41,693	47,197	40,493	40,013	40,753	47,004	54,779	55,668	55,668	55,668

N. B. Figures put in parenthesis show the number of products.

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Regulations of Electric Consumption
at Present

Prepared by Chugoku Regional Bureau of Commerce
and Industry

7. Nov., 1946

In the Chugoku district, supply of electricity has become suddenly to the worst condition, and the reasons for which are; decrease of generation by natural water flow, decrease of resorvoir's contents, rapid decrease of supply from the Kinki district by long distance transmission, and the enormous decrease of out-put by fire plants owing to the lack of the Kyūshū coal. In order to tide over this hard conditions, we are obliged to limit the consumption so far as never did before. But we do not limit the supply for the use of occupation forces. The new limitation rates are as follow:

1. Limitation of Consumption

The rate of limitation is intensified from 20 0/0 as follow:

transmission, and the enormous decrease of out-put by fire plants owing to the lack of the Kyū-hū coal. In order to tide over this hard conditions, we are obliged to limit the consumption so far as never did before. But we do not limit the supply for the use of occupation forces. The new limitation rates are as follow:

1. Limitation of Consumption

The rate of limitation is intensified from 30. Oct. as follow;

(1) The limitation of electricity (Kilowatt hour, load)

a) For coal mine 5 %

b) For special industries such as ammonium sulphate, transportation and communication, broad casting, newspaper, gas, water service, irrigation and drainage and flour mills etc. 20 %

c) For general industries 50 %

(2) The method of limitation

Generally, we do not supply the electricity for the designated days, but on the special cases we supply every day, but we limit the supply of electricity by kilowatt hours.

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(3) For the electric furnace, we do not supply as far as possible. In order to compensate the decrease of production, we must consider in some day after.

(4) For the factories, which are producing the goods and materials for the use of the occupation forces, general limitation rate shall be applied, but, special consideration shall be made on the case, when the productivity should fall so far as could not meet the demand.

(5) For the electric lamp, no limitation is applied, but we ask the general consumers to save it 50% spontaneously.

2. The limitation on the peak load (kilowatt load)

From 7. Nov. for the general consumers of electricity, the consumption should be stopped every night between 17 o'clock and 5 o'clock. But the exceptional cases are as follow;

a) the electric lamps

b) the coal mines

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the general consumers to save it 50% spontaneously.

2. The limitation on the peak load (Kilowatt load)

From 7. Nov. for the general consumers of electricity. the consumption should be stopped every night between 17 o'clock and 5 o'clock. But the exceptional cases are as follow;

a) the electric lamps

b) the coal mines

c) the Public services (transportation and communication, broad casting, newspaper, gas, water service etc.)

d) the minimum supply for the mines and factories, in order to prevent the disaster, the maintainance of equipments, and for the preservation of raw materials.

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1.

EFFECTS WHICH THE REMOVAL OF STEAM POWER-PLANTS SPECIFIED FOR REPARATION IS EXPECTRD TO BRING ABOUT.

Prepared by
The Chugoku Branch of
J.E.G.T. Co. Itd.
The Chugoku Electric
Power Supply Co. Ltd.
Sept. 27, 1946

INTRODUCTION

In the Chugoku District (Okayama, Hiroshima, Yamaguchi, Shimane and Tottori Prefectures) we have ten steam powerplants (total authorized out-put; 264, 200 kilo-watts), but three of them (total authorized out-put; 21,750 kilo-watts) are superannuated and show a considerable lack of efficiency. For the moment, these are in suspension of operation. Therefore only seven steam power-plants are in operation and their authorized out-put is counted to be 242, 450 kilo-watts.

But as since the out break of the war, the quality of coal became poorer than ever, and sine lack of repair had reduce the possible out-put by half of the authorized out-put, and since at present, the equipments are badly injured by over-work during the war, we cannot maintain but twenty eight per-cent of the authorized out-put.

The SCAP has recently ordered to preserve the equipments of five steam power-plants (Sanban, Matsue, Saka, Ubenishi and Onoda, belonging to the Nippon Electric Generation and Transmission Co. Ltd.) In this

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case, the rest of steam power-plants would be five, of which rethree are now in suspension of operation. (Onomichi, Nima, Ihonosho.)

The following table shows the names of our steam power-plants, their authorized out-put, their possible out-put on the end of 1946, possible out-put after repairing and remarks.

Power-plants which are ordered to preserve the equipments

NAMES OF STEAM POWER PLANTS	AUTHORIZED OUT-PUT kW	POSSIBLE OUT-PUT ON THE END OF 1946 kW		POSSIBLE OUT-PUT AFTER REPAIRING kW
Sanban	51,500	3,000		16,000
Matsue	14,000	10,000		10,000
Saka	64,200	20,000		35,000
Ubenishi	14,000	7,000		7,000
Onoda	15,000	10,000		25,000
TOTAL	158,700	55,000		93,000
The rests of power-plants			AT PRESENT	
Ube	60,000	15,000	10,000	36,000
Maeda	23,750	10,000	8,000	14,000
Onomichi	10,500	5,000	0	5,000
Nima	10,000		0	4,000
Ihonosho	1,250			
TOTAL	105,500	30,000	13,000	59,000

REMARKS: Possible out-put after repairing contain the increase out-put by enlargement.

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* REMARKS: Too superannuated to operate				
THE SUM TOTAL	264,200	35,000	72,000 (23%)	152,000

The above table shows the normal conditions. But for the time present we can not obtain those normal conditions. For example we are obliged to use coal of worse quality than the standard, although we know well that, it is not appropriate to increase the out-put, as well as to preserve the equipments. There are neither possibilities of supply of standard coal, nor can we improve and repair the equipments. Consequently, it is impossible to expect a rapid increase of the possible out-put at the present.

GENERATION BY WATER

The chain of mountains, that forms the back bone of the Chugoku District, runs from the East to the West, and the broadth of this district, that is from the North to the South is relatively narrow, and above that, the soil is made of granite. So that is very inconvenient to erect power-plant by water. At present, we have water-plant able to generate 280,000 kilo-watts during the rainy seasons, but during the dry and frozen seasons, the out-put decreases enormously, and the out-put by natural streams becomes so low as to reach only 50,000 kilo-watts. Even supplemented by reservoirs, to be converted into 33,000,000 kilo-watts hours, of out-put, when we intend to use them efficiently throughout the dry and frozen seasons which continue for considerably long, their maximum out-put is average 30,000 kilo-watts.

Therefore, here in the Chugoku district, as well as the Kyushu Dis-

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trict, we depend largely upon steam power-plants. This district is provided with power-plants by steam and water having the equal capacity of equipment. In this point circumstances are quite the same as in the Kyushu Disteict, and quite different from other disteicts of Japan.

Especially in Yamaguchi Prefecture, there is no power-plant by to water be mentioned.

LONG DISTANCE TRANSMISSION

At the beginning of 1945, we have accomplished two power lines of 110,000 volts. One is from the Kinki District to the Chugoku District, that can transmit togetner with the line of 60,000 volts formerly accomplished, 50,000 -60,000 kilo watts. The other is, from the Kyushu District to the Chugoku District, capable transmission is supply from here 25,000 -35,000 kilo-watts, and from there is 15,000kilo-watts.

It is quite natural that the power transmitted from other disteicts depends upon the circumstances of supply and demand of the district concerned. When the steam power-plant should be removed from those disteicts during the dry and frozen seasons. they themselves would be inevitable to feel the out-put stringency, and there would be no hope for us to get supply from them .

Under such conditions the total out-put capacity during the coming dry and frozen season of this winter, with the supplement of all steam power-plants, containing the five, which are ordered to preserve their equipments, is no more than 209,000 kilo-watts with the exception of the five steam power-plants above mentioned, it is only 154,000 kilo-watts. (Table III-b)

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DEMAND OF ELECTRICITY SINCE THE END OF THE WAR

For a while, after the end of the war, the demand of electricity was rapidaly decreased to 95,000 kilo-watts, but at present, it has gone back to 2?0,000 kilo-watts, and more over, till the end of this year, increase of demand is expected to be about ?0,000 kilo-watts. (refer to the table I) So the total demand at the end of this year will become 260,000 kilo-watts.

THE ITRMS OF INCREASE OF DEMANDS ARE

I) The factories of the Chugoku district, which produce ammonium sulphate, coal, textile, agricultural implements and necessary tools for daily life.

2) The supplies for Occupation Troops for the use of residence, barracks and hospitals.

?) The necessity to discharge the obligations for Allied Forces, for instance to produce necessary goods for Occupation troops and export goods.

And it includes necessary supplies for minumum grade of electric heat for domestic cooking covering the shortage of woods and charcoals, but it excludes the supplies for the salt manufacture by electricity and electric boiler plants.

The supplies for those factories, which are determined to be the reparation for the Allied Forces, amount at present, 18,100 kilo-watts. We had expected that the supplies would gradually decrease, but on the contrary, these factories carry on the producation of goods necessary for

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the maintainance of lowest standard of national life, and even when the equipments of hothese factories should be carried abroad, the production shall be maintained by the remaining factories, so that the demand of electricity shall rather increase than decrease in the near future.

EFFECTS OF REMOVAL OF STEAM POWER PLANTS' WHICH ARE SPECIFIED FOR REPARATION

When we compare the supplies and demands of electricity without the five steam power-plants, which are specified for reparation, the expectant results are shown by the table III.

During the dry and frozen season of this winter, average shortage per month is 92,000 kilo-watts on January, 72,000 kilo-watts on February and the maximum shortage amounts to 106,000 kilo-watts.

CAN WE COVER THE SHORTAGE BY LIMITATION ON CONSUMPTION?

The table II shows the arrangement to cover the shortage of electricity exclusively by limitation on consumption. As you see, the statistic is based on the conditions of a steict observance during a long time. Therefore its realization is inevitable to cause not only the deore decrease of such important production as coal and ammonium sulphate, but the unfulfillment of obligation for Allied Forces, such as to interrupt the production of goods for the use of Occupation Troops as well as for the export goods repaying the provistions and other necessary goods, whix which they so kindly supplied us. Furthermore, it is impossible to

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secure the necessary electricity for the public use, such as water-works, sewarage, transport, communication and sanitation. What makes the matter worse is, the fact that owing to the lack of lamps the population is forced to do with minimun lamp lights at present. When the restriction of demand would become more strict and with the winter season the darkness of the nights will be intensified, the conditions must be expected to be intolerable.

When 60,000 kilo-watts by steam power-plants should be supplied, the restriction would be alleviated to such extent as the IV shows.

OTHER METHODS TO COVER THE SHORTAGE

On the first place, we must repair and improve as soon as possible the remaining steam power-plants and put into requisition of industral steam power-plants. But even when we try our best to repair and improve the remainder, it is impossible to expect the enlargement of the possible out-put during this year (1946). And for the worse, the bad quality of coal and the damages of the equipments of independent steam power-plants will interrupt the out-put, so that it is no more than 10,000 kilo-watts which can be put into requisition. Therefore the consequence is that, wanting of 50,000 kilo-watts is uncoverable and there is no other way left, except to secure the four steam power plants of Sanban, Matsue, Saka and Onoda (Altogether the possible out-put on the end of 1946 is 43,000 kilo-watts).

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CIRCUMSTANCES OF DRY, FROZEN SEASON ON THE YEAR OF 1947

In the year of 1947, possible increase of demands, which are strictly limited to those that are indispensable, items of which are shown on the table II amount to 39,300 kilo-watts Concerning the increase of the supplies, 29,000 kilo-watts by repair and improvement, of steam 7,000kilo-watts by erection and restoration, of hydraulic and altogether 36,000 kilo-watts may be expected to increase. Balance betwem supplies and demands is tabulated on the III. Taking into account the out-put of 10,000 kilo-watts of industrial power-plants, there remains also the lack of 85,000 kilo-watts.

In order to cover the shortage by limitation on consumption, the consequences will be quite the same with the dry and frozen seasons on the of 1946. After all it is obvious that, we can no longer meet the minimum demand without the above mentioned four steam power-plants (86,000 kilo-watts of possible out-put on the end of 1947 is expected).

CONCLUSION

We can not tide over the dry frozen seasons on the year of 1947, without the four steam power-plants thich are Sanban, Matsue, Saka and Onoda. And on the following years, there are no prospects of enlargement nor improvement of new generation of electric power, sothat we can not help but asking to release the specification of steam power-plants of Sanban, Matsue, Saka and Onoda from reparation.

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TABLE SHOWING ESTIMATE OF LOAD FOR JANUARY 1947

Total Demands at Power Sending end	260,000 kW
Aug. 1946	230,000 kW
Increase	30,000 kW
PARTICULARS (at receiving end)	
Increase of big consumers' consumption	9,500 kW
Increase of lights and small consumers' consumption	2,600 kW
Consumption by Occupation Forces	5,600 kW
Seasonal Increase	10,000 kW
Decrease of consumption (factories to be taken away for war indemnity)	6,600 kW
BALANCE	22,100 kW
Converted into demands at sending end	30,600 kW

PARTICULARS OF INCREASE IN BIG CONSUMERS' consumption

NAME OF FACTORY	LINES OF BUSINESS	kW
Hitachi Seisakusho Kasado Factory (Kudamatsu City)	Carriages	1,000
Japan Petroleum Co. Ltd. (Kudamatsu City)	Oil Refinery	700
Teikoku Rayon Co. Ltd. Iwakuni Factory (Iwakuni City)	Rayon	5,700
Takeda Pharmaceutical Co. Ltd Okayama Factory (Okayama City)	Pharmaceutical	500

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Kurashiki Spinning Co. Ltd. Okayama Factory (Okayama City)	Cotton Spinning	500
Tokuyama Soda Co. Ltd. (Tokuyama City)	Soda	1,800
Ube Kosan Co. Ltd. Ube Nitrogen Factory	Ammonium Sulphate	5,000
		13,200

n 13,200 kW - 1.4 9,500 kW
(estimated actual consumption)

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TABLE SHOWING ESTIMATE OF LOAD FOR JANUARY 1948

Total Demands at Power Sending End	299,000 kW
Jan. 1947	260,000
Increase	39,000
PARTICULARS (at receiving end)	
Increase of lights and small power consumers	7,200 kW
Consumption by Occupation Forces (residences)	7,200
Increase of big consumers	19,900
Decrease of consumption (factories to be taken away for war indemnity)	6,000
BALANCE	28,300 kW
Converted into demands at sending end	39,300 kW

PARTICULARS OF INCREASE IN BIG CONSUMERS' CONSUMPTION

NAME OF FACTORY	LINES OF BUSINESS	KW
Teikoku Rayon Co. Ltd. Mihara Factory (Mihara City)	Rayon	14,000
Teikoku Rayon Co. Ltd. Tadanoumi Factory (Tadanoumi Town)	Agricultural Chemicals	5,000
Miyoshi Chemical Works (Iwakuni City)	Pulp	2,300
Hirochima Railway Bureau. Hikari Car Factory (Hikari City)	Carriages	5,000
Toyo Spinning Co. Ltd. Fuchizaki Factory (Shodoshima)	Cotton Spinning	1,000

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No. 11 (Continuation)

Nisshin Paper Mfg. Co. Ltd. (Okayama City)	Paper	1,500
Shikishima Spinning Co. Ltd. Ajino Factory (Ajino Town)	Cotton Spinning	1,000
		27,300

27,300 kW ÷ 1.4 = 19,900 kW
(Estimated actual consumption)

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NO. III - a

TABLE SHOWING ESTIMATE OF AVERAGE LOAD IN CHUGUKU AREA

(For Winter of 1947 and Winter of 1943, Drawn on Sept. 5, 1946)

AVERAGE MAXIMUM POWER ($\times 10^3$ kW)

YEAR/ MONTH	1946 Oct.	Nov.	Dec.	1949 Jan.	Feb.	Mar.	1947 Oct.	Nov.	Dec.	1948 Jan.	Feb.	Mar.
Total Demands	243	247	255	260	260	260	290	292	295	299	299	299
Supplied water Power by Ch.E.S.Co.	41	36	37	35	42	43	44	39	40	38	45	46
To be supplied by N.E.G.T.	202	211	213	225	218	217	246	253	255	261	254	253
Power to be Accommodated from other area	60	50	20	0	0	0	60	60	80	0	0	0
N.E.G.T. Water Power	138	103	108	73	86	165	142	107	112	77	80	169
Using Reservoirs	0	0	30	30	30	0	0	0	0	0	0	0
Required Steam Power	4	53	60	122	102	52	44	96	93	154	134	84
Possible Steam Power of the Remainder	30	30	30	30	30	30	59	39	59	59	59	59
Shortage	0	23	30	92	72	22	0	57	34	95	75	25

REMARKS

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No. III (Continuation)

a) The above figures show monthly average of mximum loads

b) The estimate of water power is based on the average of the last three years. For and often October, 1947 the "N.E.G.T. Water Power" includes the supply to be expected from the Yesuno Plant 4 M.W. whose construction will be completed by that time, and the supplied Water Power" by Ch. E.S.Co. " includes power supply to be increased as a result of rehabilitation of flood damages.

Hiro -

Naganoyama

Kumahira - About 3 M.W. increased at 4 points rut

Iri - together

c)

		1947 Jan-Mar	1948 Jan-Mar
Possible steam power supply	Ube electric Power station	15	36
	N.E.G.T. Onomichi Electric power station	5	5
	Maeda Electric Power station	10	14
	Chugoku Power Supply Co. Ltd. Nigata electric power station	0	4
	TOTAL	30	59

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NO III-'b

TABLE SHOWING ESTIMATE OF AVERAGE LOAD IN DRY SEASON

BASED ON AVERAGE MAXIMUM LOAD OF 5 DAYS RUNNING

Year/Month	1947/January	1948/January
Total Demands	260	299
Supplied Water Power by Th. E.S.Co.	29	32
To be Supplied by N.E.G.T.	231	267
N.E.G.T. Water Power	64.6	63.0
Using Reservoirs	30	30
Required Steam Power	136.4	169.0
Possible Steam Power of the Remainder	30	59
Power to be accomdated from other area	0	0
Total Output Capacity	157.6	189
Shortage	106.4	110.0

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NO. IV

ESTIMATE OF LIMITATIONS OF POWER SUPPLY

TO BE IMPOSED IN WINTER TIME

(1) POWER DEMANDS AND SUPPLY IN JAN. AND FEB. 1947

(Unit 1000 kW)

Year/Month	1947/1	1947/2	1948/1
Power Demands (A)	260	260	260
Capacity of Supply	168	188	154
Shortage (Supply tobe Limited) (B)	92	72	106
Percentage B/A	35%	28%	41%

(2) KINDS OF CONSUMPTION TO BE LIMITED WHEN LIMITATION OF 30% OR 40% IN AVERAGE IS TO BE EFFECTED

(Unit 1000 kW)

KINDS OF CONSUMPTION	30% LIMITATION %OF POWER LIMITATION	(IN kW)	40% LIMITATION % OF POWER LIMITATION	(IN kW)
Important Industries (Big Consumers)	20%	13.0	30%	19.5
Other Big Consumers	3[illegible]%	34.6	45%	46.7
Small Consumers, Heaters and lights	33%	30.5	45%	41.1
TOTAL	30%	78.1	41%	107.3

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NO. IV (continuation)

(3) PRACTICABLE LIMITATION

(Vint 1,000 kW)

KINDS OF CONSUMPTION	PERCENTAGE OF LIMITATION	POWER (IN kW)
Important Industries (Big Consumers)	0%	0
Other Big Consumer	20%	20.7
Small Consumers Heaters and Lights	10% (Heaters and Lights 20%)	9.1
TOTAL	11%	29.8

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NO. IV

REMARKS

(1) The important industries "referred to in above include the following industries"

Coal mines, ammonium sulphate factories, factories of nitrolime, flour mils, irriga tion, drainage, ice factories, refrigeration factories, railrods, communication, water-ways, sewerages, newspapers, hospitals and other medical institutions.

(2) The limitation of power consumption to be imposed on industries in generals in practicable only up to 20% (1 holiday in 5days). In order to effectuate limitation of 30% it is necessary to demand economy of 30% to general industries (1 holiday in 3 days) and that of 20% to "Important industries" which is extremely difficult.

In order to effectuate limiysion of 40%it is necessary to demand economy of 45% to general industries, which is entirely impraticable.

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SUPPLY OF ELECTRICITY IN THE CHUGOKU DISTRICT PRESENT STATUS AND FUTURE PROSPECT

(PREPARED BY J.E.G.T.CO.
OCT.,1946.)

A) Water Power Plant

Figure 1 shows daily water quantity throughout the year of 1945, converted into the power out-put by kilo watt.

As you see, in march and April, when water quantity is very rich, it can put-out so much as from 200,000 k.w. to 280,000 k.w., and on so called minimum waterflow seasons of the Ch-ugoku District, that is, during frozen season of January and February it is so low as 90,000 k.w. Owing to the peculiarity of the Chugoku District's river and soil condition above that, it is a rule that water quantity decreases much more during the dry season of summer than in the frozen season of the winter. The dry season comes regulary in August and exceptionary in June if it rains extraordinary little. Remember please, that in 1943, the water quantity was higer than the average of the past three years. Refer to the item of the Hydraulic Power on the Table II. It is considerably difficult to prospect the future out-put by water plants, because it depends largely upon the rainfall, We have based our plans for the future upon the average rainfall of the past three years.

The power plant, which we are constructing now, is only Yasuno Water Power Plant. Its out-put is during the rainny season 5,300 k.w., and during the dry and frozen season 3,800 k.w.

Besides, we are trying our best to repair four water plants.

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which are badly injured by the storm in 19485. When the reparations are accomplished, we can expect an out-put of about 3,000 kW. The five water plants, above mentioned, will be started again from September 1947, therefore we have included their out-put power from the coming October of 1947,

Finally some words about the reservoir. The capacity of our reservoirs is converted into electricity of 33,000.000 kWH Utilizing the reservoirs, we can supply 30,000kW daily, ~~tenhours of~~ day time during the winthr frozen seaspn and the summer dry season, when the water quantity becomes very low.

The item of the Hydralic power of the Table III shows our prospect on the out-put up to the march 1948.

B) Steam Power Plant.

Just after the surrender, demand of the electricity decreased enormously and from that time to June of 1946, we could meet almost all the demands with the out-put by our water power plants and the long distanced transmission from the Kinki District. So we could do with very small supplement of the out-put by our steam power plants.

Please refer to the Figure II. The out-put by steam power plants on January 1946, was the supply for Kyushu District by long distance transmission line, in order to cover the shortge of the supply of that district.

It is afact also, that we had operated the steam power plants in February and March 1946, At that time the coal, which had been stored, began burning by strong pressure, and we were obliged to consume it. But the total out-put on both cases was very small. After May and July, the load increased step by step, and the water quantity became lower and

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lect. In order to fulfill the demand, we were supplied from Kinki District by long distance transmission lines, but could not cover the shortage, so we had to put in action our steam power plants. To fulfill the demand of ammonium sulphate industries, we had supplied independently by the steam power plants near by, even when the water quantity was superabundant. The reason for it was, the frequency of accidents by the cables and the special nature of ammonium sulphate industry. ~~In action~~ In September, like in August, it did not rain, and we put in action all the steam power plants, including the five, which are specified for reparation, But the total out-put remains far behind the total demand, we had to resort to limiting the demand. The limitation degree was so severe, that even the most important industries, one day out of three must rest from work. You will be able to imagine how such a strong limitation of work affects the productivity. The Figure II "The Load-Curve of the Chugoki District" shows the past status of out-put by steam power plants,

The item of "the Necessary Steam Power" of the Table I indicates the power of out-put by steam plants during the time from October 1946 to March 1948. Picking up the biggest figures; 122,000 kW in January 1947, 119,000kW in August 1947 and 154,000kW ~~in January 1948~~.

The item of "Possible Steam Power" of Table I shows the total out-put of all the steam power plants, which were not specified for reparation.

As you see, the demand exceeds supply, and defect of out-put is 92,000kW in January, 72,000kW in Februaty and 69,000kW in August 1947, 95,000kW in January and 75,000kW in February 1948.

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The details are indicated under the item of "insufficient power" of the Table I.

C) Long Distance Transmission; Receiving Power from the Kinki District.

Please refer to the item of " Received power" of the Table II " Supplied Power on the past One Year ". From the Kinki District, we are supplied mainly through the Chugoku power line of 110kV, which was accomplished in February of 1946, and besides of which we use also earlier completed power line of 66kV. The power, which was supplied through these two routes are shown under the item of" the Recieved power" on the Table II .

Just after the surrender, the load of the Kinki District decreased and the out-put by hydraulic power plants was abundant, so that we could expect plenty of supply from that district. But, not expect much supply from that district, except in Spring and Autumn, when the water capacity is rich. (now that the load of the Kinki District has recovered) To make the matter worse, the excellent equipments of the hydraulic power plants of that district are specified for reparation or badly injured by air rouds, so there is no hope left to be supplied from them during the frozen season.

About the prospect for the future, during the frozen season of the Kinki District, that is from January, to March, there may be no supply from there, and during the other time, we may be able to be supplied with 60,000kW at the maximum, in spite of that we are obliged to supply for the Kyushu District. We must project for the future supply and demand, taking into consideration the figures which are arranged under the item of the "Recieving Power from Other District"

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on the Table I.

D) The Long Distance Transmission, Supplying Power for the Kyushu District.

The transmission line between the Chugoku District and the Kyushu District is called "Kanmon main line" and accomplished in December 1945. In August 1946, water quantity decreased in Chugoku District, but comparatively rich in Kyushu District, So we could not only supply for them, but even, sometimes, when our water quantity decreased, we were supplied from there. The Table II shows the detail of these circumstances.

Please refer to the Figure II " The load Curve of Chugoku District." Generally the stream of electric power flows from the East to the West, that is, from the Kinki District through the Chugoku District to the Kyushu District, Actually the Power which we transmit to the Kyushu District is not the whole that was supplied by the Kinki District, but some of it we have to use in our district. As we have mentioned in former section C) on the dry and frozen season, it is impossible to expect to be supplied from the Kinki District, and even when some power should be supplied from there, we must transmit it all to the Kyushu District, and there remains no power for our own use.

The item of the "power to be Recieved from Other District" of the Table I indicates the figures, that was calculated upon the premises of section C) and D).

E) Conclusion

To sum up the above mentioned explanations, the conclusion is as follows.

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To cover the shortage of our hydraulic out-put in the frozen season, we have to use the steam power plants. And the expectant out-put of five plants amounts to 122,000kW in January 1947, and 154,000kW in January 1948, as the "Necessary Steam Power" of the Table I shows.

When the five steam plants, which are specified for reparation should be carried away, the shortage of electric power supply would be so much as 92,000kW in January 1947, and 95,000kW in January 1948.

We have arranged the presumed supply and demand during five continuing days of January in 1947 and 1948, when the water capacity shows its minimum degree. You will see it on "B" of the Table I.

In order to savure the necessary minimum electricity, we can not help but asking you to release at least the four steam plants from the specification for reparation.

Table I

(A)

Prospect of load balance in Chugoku district

Mean maximum power ($\times 10^3$ KW)---unit

Year / month	demand	hydraulic power		Received Power from the other district	Possible Steam Power	total suppliable Power	insufficient power	necessary steam Power
		natural flow	reservoir					
1946 Oct.	243	179	0	60	30	269	0	4
Nov.	247	139	0	50	30	219	28	58
Dec.	255	145	30	20	30	225	30	60
1947 Jan.	260	108	30	0	30	168	92	122
Feb.	260	128	30	0	30	188	72	102
Mar.	260	208	0	0	30	238	22	52
Apr.	265	201	0	40	30	271	0	21
May.	270	143	0	40	40	223	47	87
Jun.	275	133	30	20	40	223	52	92
Jul.	275	154	30	20	45	249	26	71
Aug.	280	111	30	20	50	211	69	119
Sept.	255	174	0	30	55	259	26	81
Oct.	290	186	0	60	59	305	0	44
Nov.	292	146	0	50	59	255	37	96
Dec	295	152	30	20	59	261	34	93
1948 Jan.	299	115	30	0	59	204	95	154
Feb.	299	135	30	0	59	224	75	134
Mar.	299	215	0	0	59	274	[illegible]	[illegible]

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Jun	275	133	30	20	40	223	52	92
Jul.	275	154	30	20	45	247	26	71
Aug.	280	111	30	20	50	211	69	119
Sept.	255	174	0	30	55	259	26	81
Oct.	290	186	0	60	59	305	0	44
Nov.	292	146	0	50	59	255	37	96
Dec	295	152	30	20	59	261	34	93
1948 Jan.	299	115	30	0	59	204	95	154
Feb.	299	135	30	0	59	224	75	134
Mar.	299	215	0	0	59	274	25	84

Notes ;

(1) The load is the mean maximum value (prospect value)

(2) Hydraulic Power is the mean value in recent 3 years and after Oct. 1947, the power of Yasuno water plant now under constraction 4.0 MW, and Hiro, Naganoyama, Kawahira, Iri plant (now repairing total out put 2.0 M.W. in dry season) is added

(3) Possible out put of steam plant

Name of power plant	Jan. - March 1947	Jan - March 1948
Ube	15.000 KW	36.000 KW
Onomichi	5.000	5.000
Maeda	10.000	14.000
Nima	0	4.000
total	30.000 KW	59.000 KW

(B)

Prospect of load balance in the Five continuous days of the most dry season

Year / month	demand	hydraulic power		received Power from the other district	Possible Steam Power	total Suppliable Power	insufficient Power	necessary Steam Power
		natural flow	reservoir					
1947 Jan	260	93.6	30	0	30	153.6	106.4	136.4
1948 Jan	299	100.	30	0	59.	189.0	110.0	169.0

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Table II

Supplied power in th

year & month	Total demand Power		Hydraulic Power				Received po		
			Hassoden		Haiden		from Kinki		fro
	Total (×1000KWH)	Maximum (×1000 KW)	Total (×1000 KWH)	Maximum (×1000 KW)	Total (×1000 KWH)	Maximum (×1000 KW)	Total (×1000 KWH)	Maximum (×1000 KW)	To (×100
1945 Oct.	70.151.6	106.5	43.342.5	91.0	27.066.0	45.2	0	0	
Nov.	88.108.5	151.9	56.121.9	117.1	20.538.1	36.9	11.605.3	36.6	
Dec.	98.133.8	174.3	71.824.1	165.2	21.954.8	40.7	13.305.9	45.0	
1946 Jan.	105.783.0	191.4	82.579.2	172.3	24.901.8	44.8	9.643.9	33.0	
Feb.	106.530.0	203.0	91.725.5	190.9	24.956.5	46.8	5.517.2	37.2	
Mar.	124.961.6	220.7	97.384.4	192.8	35.689.3	53.4	1.438.0	26.0	
Apr.	121.730.1	218.3	90.980.3	187.6	34.035.6	52.3	9.264.6	51.6	
May.	133.251.3	237.3	84.376.8	188.1	33.294.9	52.2	20.704.2	58.0	
Jun	128.695.3	227.8	82.018.6	173.7	35.017.5	56.8	21.049.4	62.0	
Jul	129.044.7	236.3	77.550.6	164.2	34.888.8	55.6	20.928.7	65.3	
Aug.	131.487.6	232.6	72.192.9	169.1	24.995.8	54.8	29.721.1	80.3	1.

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upplied power in the past one year

Chugoku district

Power		Received power				Sent power				Steam power	
Haiden		from Kinki		from Kyushū		to Kinki		to Kyushū			
otal (000 KWH)	Maximum (x1000 KW)	Total (x1000 KWH)	Maximum (x1000 KW)	Total (x1000 KWH)	Maximum (x1000 KW)	Total (x1000 KWH)	Maximum (x1000 KW)	Total (x1000 KWH)	Maximum (x1000 KW)	Total (x1000 KWH)	Maximum (x1000 KW)
7.066.0	45.2	0	0	0	0	256.9	1.5	0	0	0	0
0.538.1	36.9	11.605.3	36.6	0	0	156.8	14.0	0	0	0	0
954.8	40.7	13.305.9	45.0	0	0	285.0	15.0	8.671.4	37.8	5.4	2.0
901.8	44.8	9.643.9	33.0	0	0	850.9	15.9	11.786.3	32.0	1.295.3	23.7
956.5	46.8	5.517.2	37.2	0	0	2413.8	37.9	16.520.8	48.7	3.265.4	30.3
689.3	53.4	1.438.0	26.0	15.5	6.5	4229.8	41.3	7.883.5	35.0	2.547.7	12.9
035.6	52.3	9.264.6	51.6	12.0	8.0	3.122.2	40.5	9.505.0	34.0	64.8	6.0
294.9	52.2	20.704.2	58.0	0	0	3.076.1	26.7	7.758.0	28.0	5.719.5	28.9
017.8	56.8	21.049.4	62.0	0	0	2.047.6	20.5	8.516.0	29.0	1.173.1	27.2
888.8	55.6	20.928.7	65.3	102.0	12.0	1.564.3	18.4	8.575.0	35.0	5.713.9	49.9
995.8	54.8	29.721.1	80.3	1.480.0	31.0	895.4	13.6	4.882.0	31.0	8.875.2	59.6

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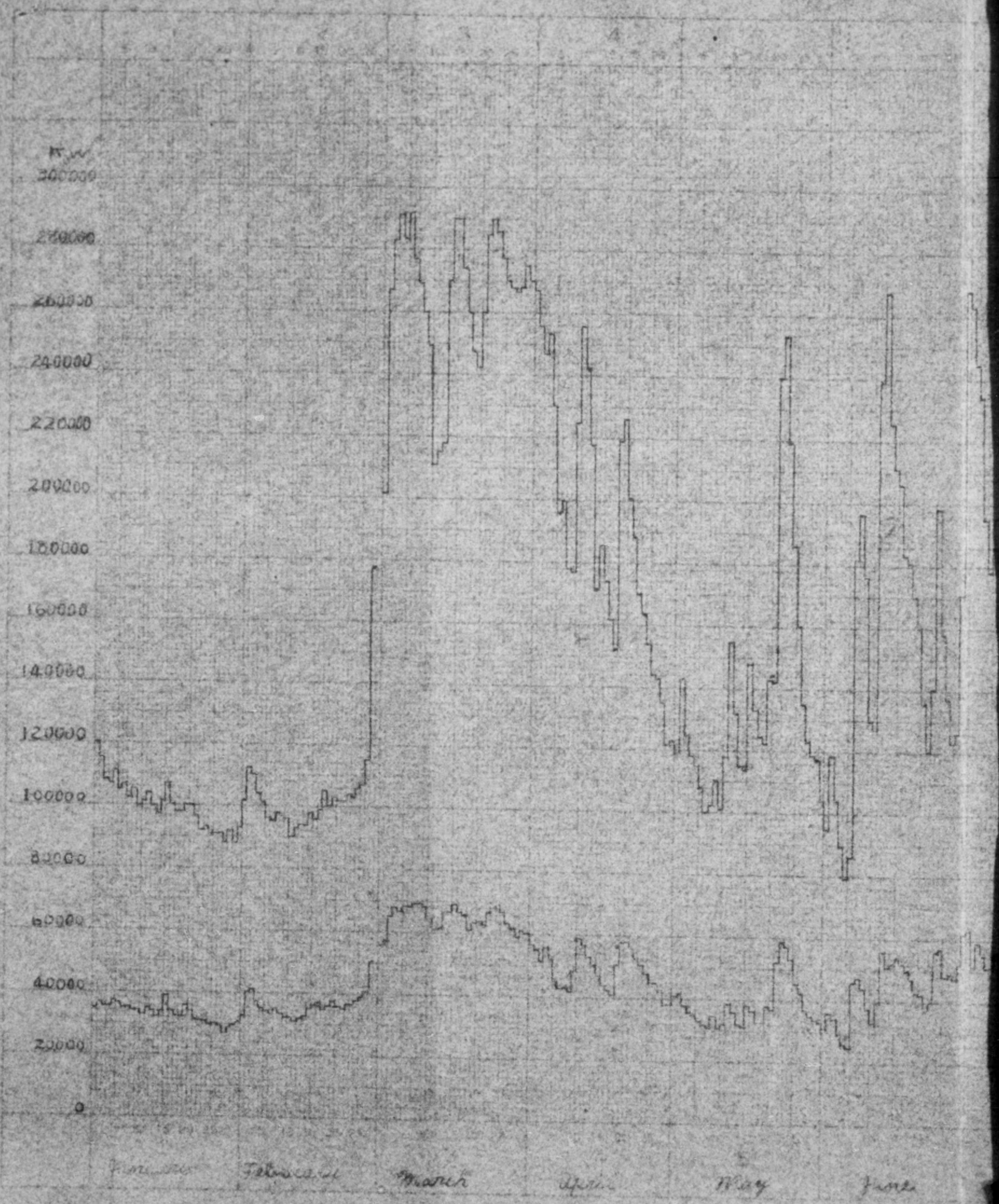
Natural water flow
自然流量發電曲



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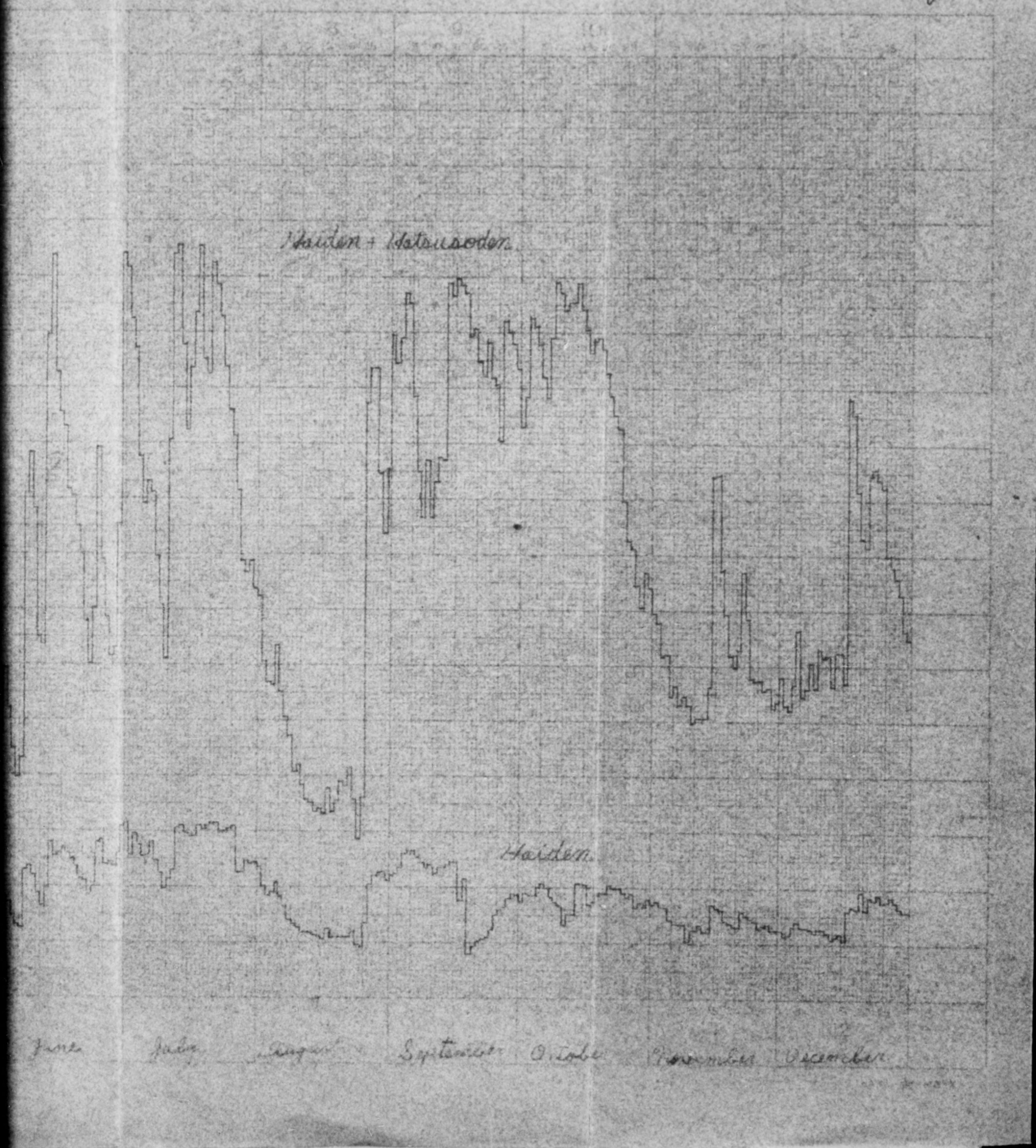
ter flow in K.W (1945)
發電曲線圖 (昭和20年度)

Fig 1



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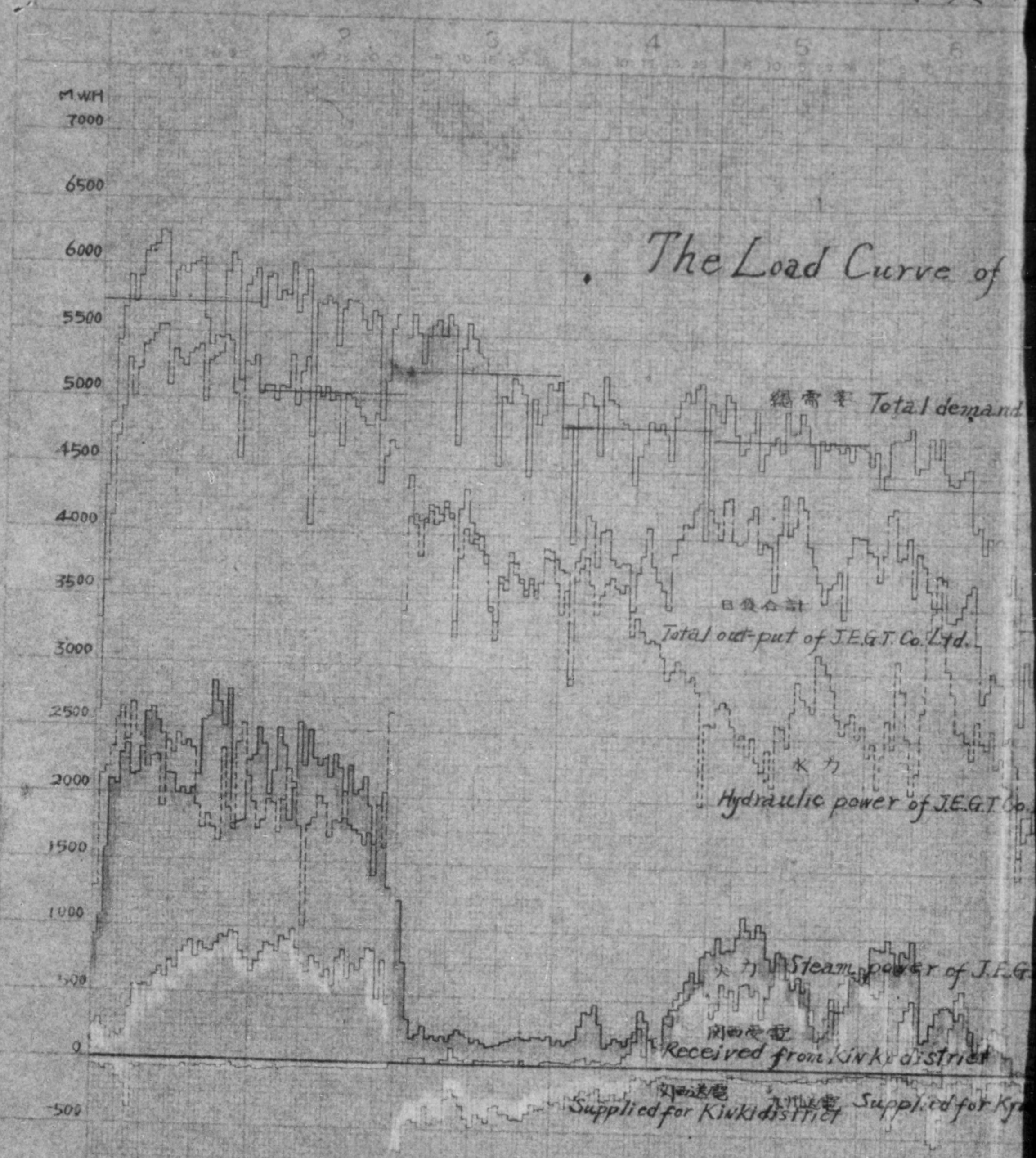
中國區域負荷



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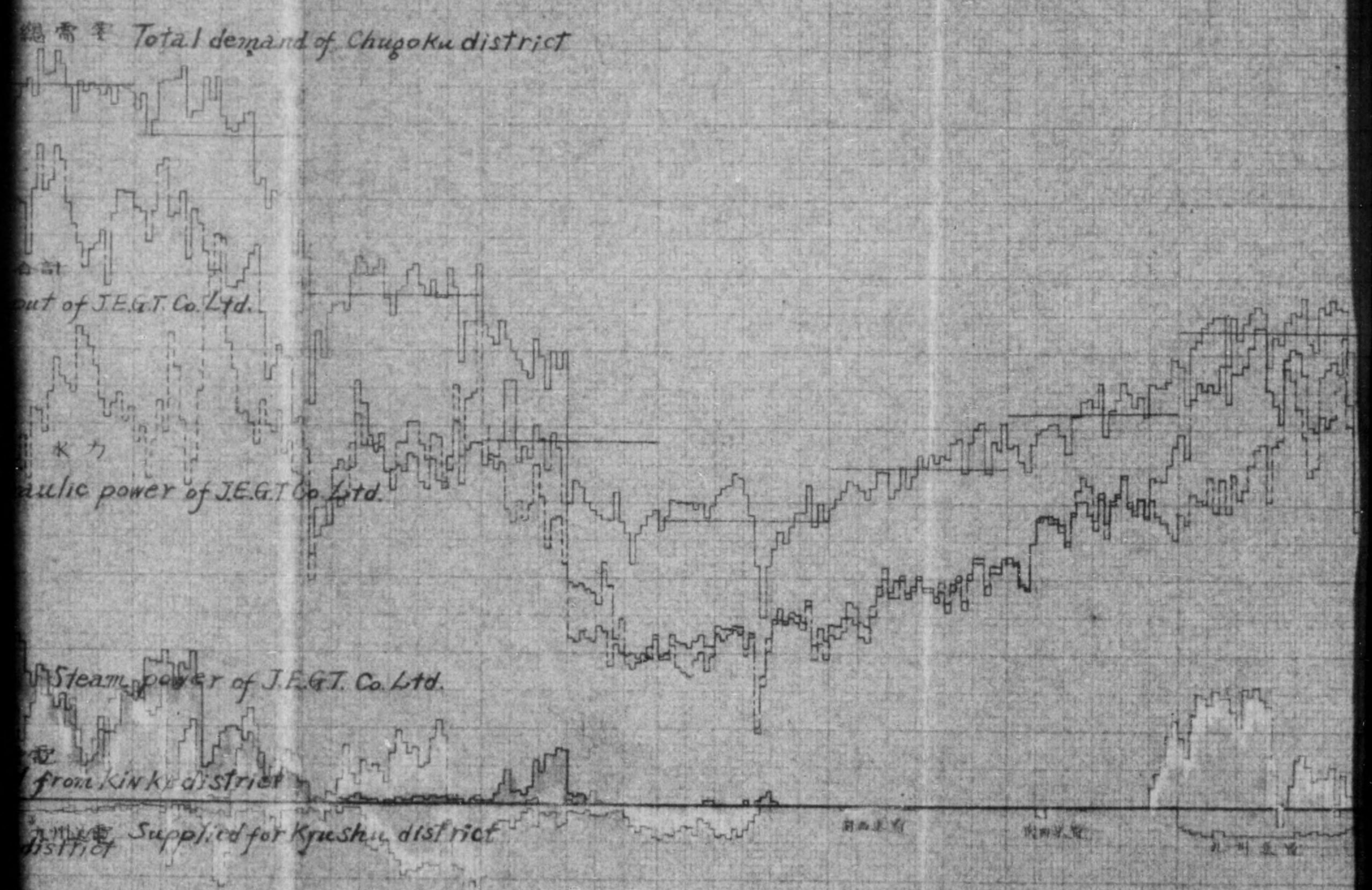
區域負荷曲線圖 (昭和20年)

oad Curve of Chugoku District
(1945)



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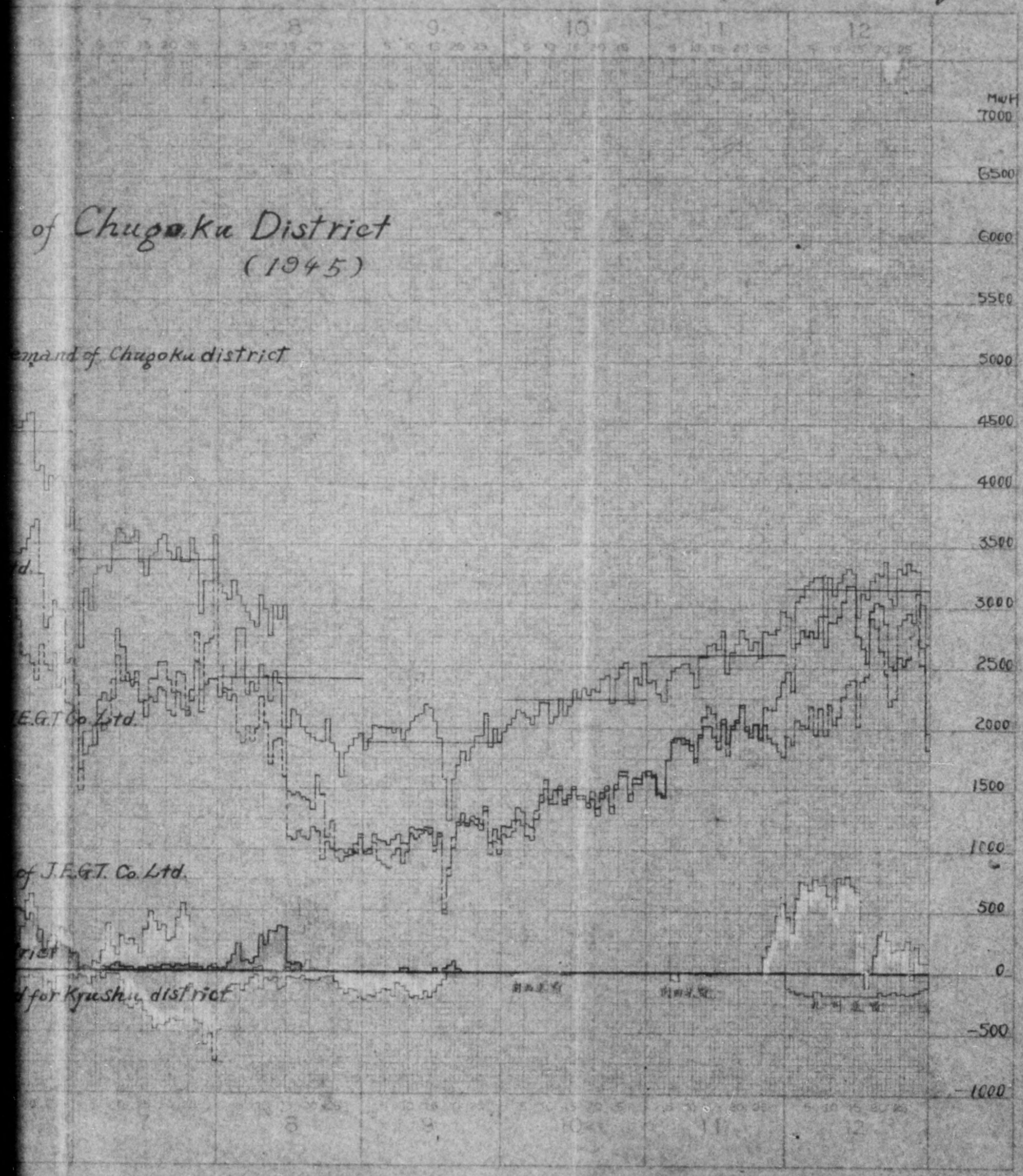

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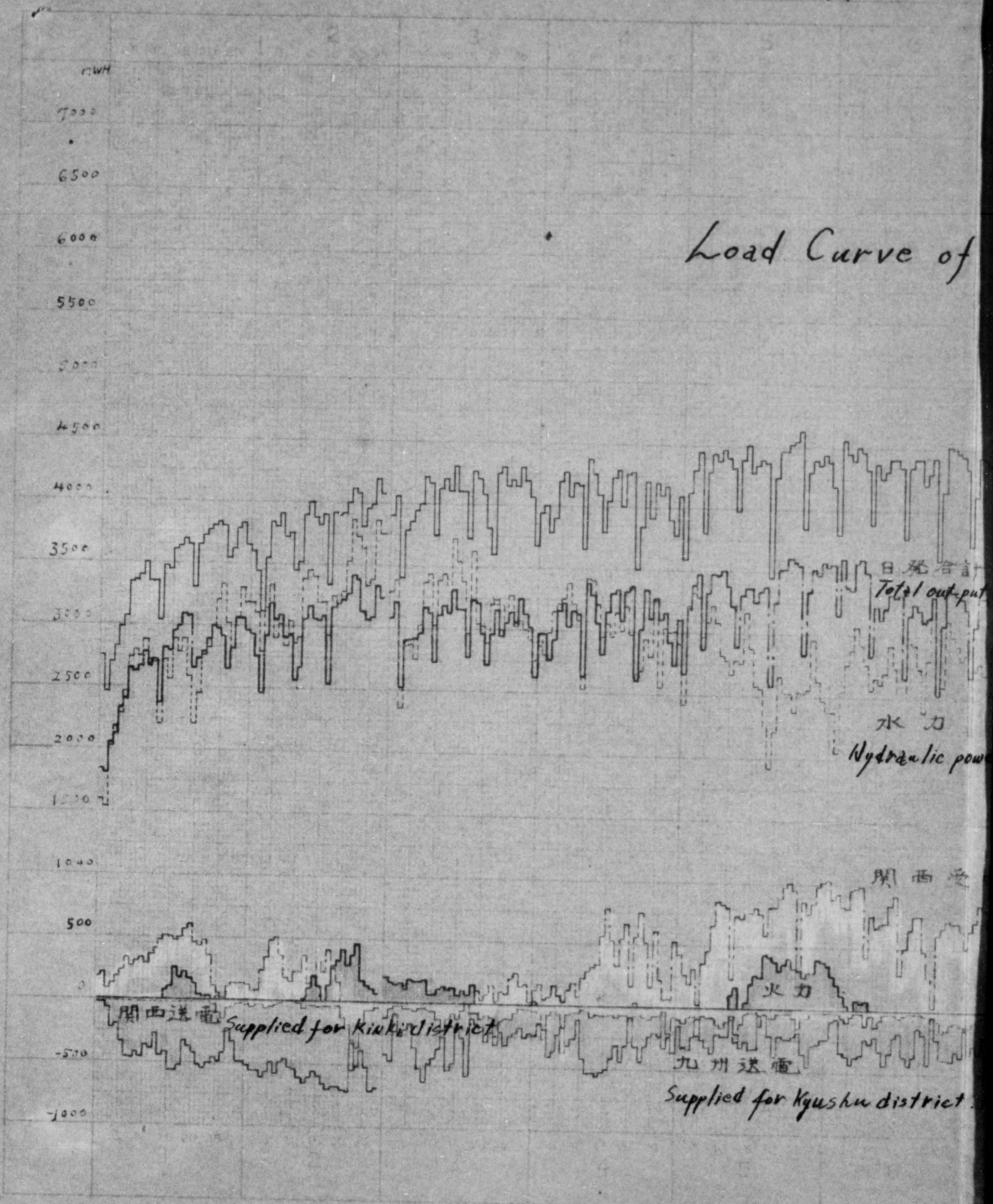

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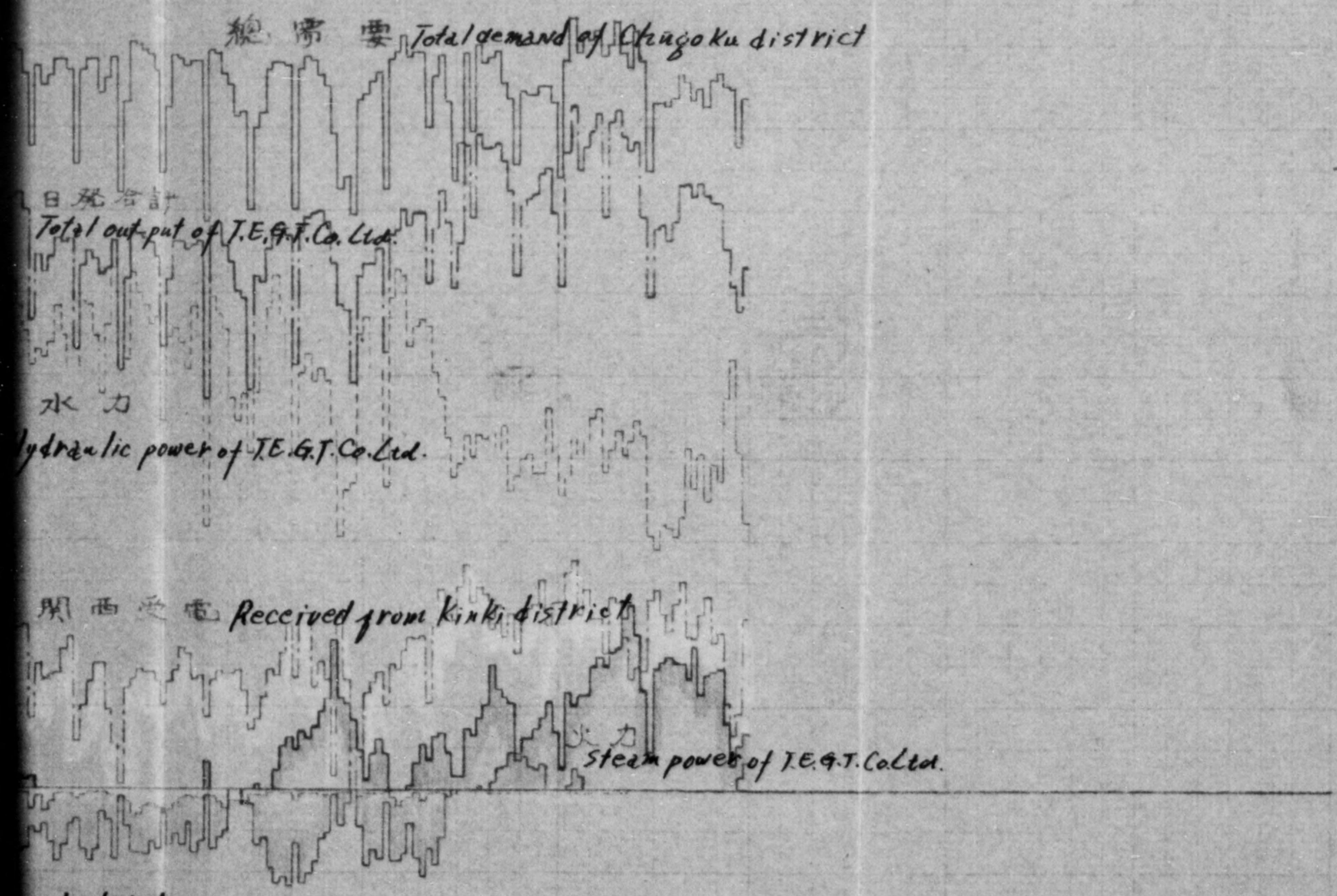
荷曲線圖（昭和21年度）

Fig 2. B

-ve of Chugoku District
(1946)



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SOME EXPLANATIONS ON THE ACTUAL LOAD OF ELECTRIC SALT MANUFACTURE, ELECTRIC BOILERS AND DOMESTIC COOKING HEATERS

(prepared by C.E.S.Co., Oct 1946)

On the first place, we have to say that our estimation on the minimum necessary electricity for the coming year of 1947 and 1948 does not contain the socalled abnormal demands.

In Chugoku District, the starting of electric salt manufacture, electric boilers and domestic cooking heaters, which are referred to as abnormal demands of electricity, came later than in the other districts. The reason for it is clear, because in our district, there is no excellent source of water power plants and in order to fulfill the necessary demand of electricity, we must depend largely upon the steam power plants. In short, we have no surplus electric power. The power of contracted and actual demands in August of 1946 are shown on the table attached. Concerning the electric furnace, there is none, which was started after the surrender. In regard to electric salt manufacture and electric boilers, the contracted power is 15,065kW, and its actual load is about 10,000kW, and as you see, this figure is not very big.

In order to tide over the coal shortage, we had begun to supply for such uses. It would be a contradiction, to supply electricity for such abnormal demands, during the time, when the out-put by water plants is not enough, and must be filled up by the out-put of steam power plants and it is one of our

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principles to refrain from such a foolish thing.

The contracted power of the domestic heater is 10,238kW., and its actual load is 6,500kW., but this does not reach so high as 0,67% of the total demand by kilowatthour. The circumstance of supply of the coal, charcoal and other fuels in the urban districts, may not increase in near future.

In order to maintain the minimum standard of national life, the supply for the domestic cooking heater is necessary, therefore. Ibeg you not consider this demand as abnormal, but normal.

Please remember, that, the minimum necessary electric power during the year of 1947 and 1948, upon which we beg you to release the specification of four steam power plants for reparation, does not include these socalled abnormal demands.

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THE INCREASE OF THE SOCALLED ABNORMAL

DEMAND SINCE THE SURRENDER

	Contracted power(kW)	Actual demand in Aug. 1946(kWH)	Actual demand by kWH compared with the total demand (%)
Electric boilers	2,050	913,000	0.86
Electric Belt Manufactures & Electric furnaces	1[illegible],015	3,680,300	3.9
Sub-total	15,065	4,593,300	4.9
Domestic cooking heaters	10,238	636,000	0.67
Total	25,303	5,229,300	5.5

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SOME EXPLANATIONS ON THE IRREGULAR INCREASE OF DEMAND OF ELECTRICITY SINCE THE END OF WAR.

(Prepared by C.E.S.CO. Oct.,1946)

Just after the surrender, demand of electricity decreased rapidly so much as to one third of wartime's demand, and there was enormous surplus of electric power. On the other hand, supply of the coal and otherfuel was extraordinary scarce. In order to tide over the shortage of fuel, the government and electric companies had encouraged, as a temporary tredtment, the installation of electric salt manufacture and electric boilers. The aim of encouragement was the overcoming of the fuel shortage, therefore, it is quite natural, to cease the supply of electricity for such purposes, when the supply of electricity becomes so low that it is impossible to cover the demand, and it has to be supplemented by the out-put of the steam power plants. In fact, during dry season of this summer, we had not supplied for them.

There is no electric furnace, that was set up newly since the end of war. It is true, that we have allowed the utilization of domestic cooking heaters. It was, indeed, an unavoidable need. But by such a method, we did not intend to promote the standard of national life. In the last winter, especially in the urban districts, there was no hope to be supplied by gas or fuels, and there was no ways left to compensate for it. Considering the present status of coal production and the other fuel supply, it seems to be very difficult to

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prohibit the utilization of domestic cooking heaters.

It will continue for conciderably longtime to supply even for domestic cooking heaters, but at present, its power demand shows, in the Chugoku district, only 0.7% of total power demand. But in order to secure the minimum electric power, which is absolutely indispensable of the maintenance of the lowest standard of national life, and does not include such an irregular demand as electric salt manufacture and electric boilers, we can not do without the four out of the five steam power plants, which are specified for reparation.

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SOME EXPLANATIONS ON THE MINIMUM ESSENTIAL DEMAND OF ELECTRIC POWER.

(PREPARED BY C. E. S. CO. OCT., 1946)

We state once more that 230,000 K.W. is the minimum essential demand of electic power for the time present at the Chugoku district. The item of "the maximum power" on the attached Table shows the details an 230,000K.W. So called abnormal demand, which has appeard since the end of war, such as electric salt manufacture, electric boilers are excluded from this minimum essential demand. The supply for the domestic cooking heaters is included, but its percentage to the total power demand is so low as 0.7%. We think that supply under this item is inevitable at present to maintain the lowest standard of national life, because of the shortage of the coal and the other fuels. The demand of electric lamps makes 23% of total power demand, but for one person's monthly demand is only 4.27K.W.H. among total demand, 71.3% is occupied by power consumers. The details of which are, for the direct use of occupation troop, for the productions of the occupation troops barracks and residences and finally for the production of commodities which are supplied for the national concume as well as exported to repay the provisions and other necessary goods which they so kindly supplied us.

At present, our productivity lies far behind

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the minium demand of our nation, and there are plenty of room left to promote the production so as to attain the maximum supply which is permitted by S.C.A.P. How far the production lies behind the maximum productivity, may be seen on the following table.

Goods	Actual Production (Aug. 1946)	Maximum Production (permitted)
Coal	127.034 kg. ton	300.000 kg. ton
Ammonium sulphte	5.095	13.550
Supermphosphate of lime	1.472	13.200
Cement	21.912	60.000

In order to justify our claim that minimum essential demand is 230.000K.W., we must add some woris more. When the supply of electnic power went down so low that we were unable to cover the whole demand since 22nd of August of this year (1945) we have carried out strong limitation on the consumption. An the first place, supply for the so called abnormal demand was curtailed to tally The actual load of this time is arranged below;

19th	Aug,	231.800 K.W. at the end of sending
20th	Aug,	222.100
21st	Aug,	221,400
mean		227,100

To round up these figures, we conclude that minimum

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essend electric power on August is 250,000 K.W.

In beginning of September, the gap between slowly demand was filled up a little, so that have followed the limitation, on general demand, except those so called abnormal demand The consequences of which is arranged as follow:

5th Sep.	228,400 K.W.	at the end of equipment
6th Sep.	231,700	
7th Sep.	233,700	
Mean	231,300	

It is a hard task to classify the actual load above mentioned. But upon the actually consumed electric power during last August, we can presume the classification as attached table. The Classification of Electric Power Consumption and Demand.

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ATTACHED TABLE OF CLASSIFICATION OF ELECTRIC POWER

CONSUMPTION AND DEMAND
CHUGOKU ELECTRIC SUPPLY CO.,LTD
AUG,1946

	Power Consumption Per Month	Average Power	Load Factor	(a) Maximum Power	Loss Factor	(b) Maximum Power
	KWH	KW	%	KW	%	KW
Lighting Load	26,584,000	35,800	55	65,000	35	100,000
Heating Load	636,000	850	20	4,200	35	6,500
Big Power Demand	53,351,000	71,680	60	119,000	15	140,000
Small Power Demand	9,250,000	12,430	50	24,860	30	35,500
Special	4,548,000	6,110	45	13,600	20	17,000
Total	94,349,000	126,870		226,660		299,000
						Diversity Factor 1,3
Supplied Power	136,398,000	183,300				230,000

As shown above, 230,000KW is the minimum power demand required in summer time, which is the least demand season throughout the year. The above demands do not include that of electric manufacture of salt. The supply of power made to salt manufacture since last April is given below. The figure for the month August shows consumption up to August 18th after which date the manufacture of salt was suspended as a result of the enforcement of limitation of power supply.

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Electric Salt Manufacture

	Average power	(a) Load (75%)	(b) Load
April	2,540 KW	3,400 KW	4,850 KW
May	4,900	6,500	7,850
June	6,650	7,500	11,500
July	5,400	7,200	10,300
August	4,940	6,600	8,400

(a) - At receiving end

(b) - At sending end

The power consumption for lighting and heating purposes in the Chugoku District is shown in the above table. Against the population of the five prefectures in this district, the consumption for lighting is only 4,27 KWH per person. The consumption at home for heating purpose comes to only 0,7% of the total and this also is confined to cooking purpose to atone for shortage of other fuels.

Population on Chugoku District 6,221,971 (Apr., 1946)

Lighting Load

KWH(per person) 26,534,000KWH ÷ 6,221,971 = 4,27 KWH

Watts(per person) 114,353KW ÷ 6,221,971 = 18,4 W=14,2 Cp

KWH(Per consumer)26,534,000KWH ÷ 1,150,324 =23,1 KWH

Watts(per house consumer)

114,353KW ÷ 1,150,324 =99,3W = 76,5 Cp

Heating Load for House-hold Cooking

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KW(per consumer) 10,238KW ÷ 16,543 = 620 W

KWH(per consumer) 636,000KWH ÷15,543 = 38.5 KWH

Load (per consumer) 4,200KW ÷ 16,543 = 255 W

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6.

(1)

WHY THE DEMAND OF ELECTRICITY INCREASED,
JUST AFTER THE SURRENDER, NOTWITHSTANDING
THE SEVERE AIR ATTACK DURING THE WAR?

(Prepared by C.E.S.CO. Oct.,1946)

In the Chugoku district, we were severely injured by air attacks so it is quite natural to presume that, the demand of electric power may decrease now that the war has finished. But, in fact, the demand shows considerable increase. Why such a phenomenon came up? We explain it as follow;

(1) A lot of factories in Hiroshima and Okayama Prefectures were injured severely, but the damage on the big factories was not so bad as the slight injuries were repaired soon after the surrender and that started work again.

(2) The badly injured factaries in both prefectures above mentioned, were ~~a supture~~ airplane factories, and the power consumption at thase factories was not so much as to effect the tatal demand of electricity.

(3) Among five prefectures of the Chugoku district, the big factories are crowded in Yamaguchi prefecture. And such factories as coalmines and productive industries which produce the goods of peoples daily use, remained safe and use carringon their work incessantly.

(4) In factories such as producing chemical fertilizer, cement, rayon and stable fibre and texture productions were very much curtailed or totally stopped during the war,

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because of shortage of raw materials. But since the end of the war, their production shows a considerable increase.

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SOME EXPLANATIONS ABOUT THE FACT THAT THE DEMAND OF ELECTRICITY INCREASES MORE THAN THE INCREASE OF PRODUCTION

The Chugoku Electric
Supply Co. Ltd.

Sept., 1946

In the Chugoku District, the maximum demand of electricity was shown at December 1944, and just after the surrender, it decreased so low as thirty percent of the maximum demand, but after that, it increased step by step, and at present, it has gotten back so far as seventy five percent.

As for the time present, the ratio of the lamp load (containing small domestic power and domestic cooking heat) to the power load is thirty percent to seventy percent. When we compare these figures with those of at the maximum time, percentage of recovery on the lamp load is twenty two percent, and on the power load is fifty three percent.

At the fire that was brought on by atom bomb, we have burned down all documents, which contains exact figures concerning the demands in each field, so we are obliged to estimate the demands of light and power during the war time, it seemes to be that the lamp load might have been thirteen percent of the total demand, and we have tabulated it on the following table:

	Lamp Load	Power Load	Total
During the War time	13%	37%	100%
At Present	22%	[illegible]%	75%

As you see, lamp load increases nine percent and power load decreases thir-

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ty four percent. The increase of lamp load is caused mainly by the fact that the increase of demand owing to the abolition of the "Protection Law of Aeroplanes Attack," but we cannot set at naught the increase of five thousand Kw by occupation forces and ten thousand Kw of domestic cooking heat, which prevails in order to cover the shortage of woods and charcoal.

The electricity for the use of production also increases so far as two times and a half as compared with the demand of October 1945. And the increase of demand at coal mine, rolling stock factories, ship buildings, manufacturing of ammonium sulphate, rayon, staple fiber and cament, andtextile industries show altogether about sixty percent of total increase. And those industries above mentioned show the increase of production, but other industries can not yet recover so far as to increase their production. About the increase of production of coal, ammonium sulphate, rayon, staple fiber, and cement, show the appended table.

Not withstanding the fifty three percent of recovery shows the power load, why the production does not increase with the same extent? We will explain it as follow:

1) During the war, the equipments of factories are so badly injured by over-work and the lack of appropriate repair that, at present, their efficiencies of production cannot increase corresponding with consumed electric power. For example:

a) Coal mine:- As the result of over-production during the war, the drift became longer and longer, and consequently, it consumes more electric power for conveyance, drainage and ventilation. Above that, new drifts' excavation and other measures are carried on,

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only to consume electric power but does not directly promote the production.

b) Ammonium Sulphate-- At the Ube Nitrogen Factory, it has monthly 12,500 gram tons' productive equipments; but only seventy percent of it is in operation. And gas generation and separation apparatus does not go well, therefore, we cannot expect high efficiency of production. In this factory, almost all the demand of electricity is for the use of motive power, and it operate at present 75% of whole factory equipment, but the production is so low as fifty percent of its equipment capacity, that is 4,000 - 5,000 gram tons.

c) Cement-- The lining of rotary kils (made of cast mangan-steel) is badly injured, and quality of coal became worth than ever.

quantity of raw material to be charged is enormously decreased, consequently, the production does not correspond with the consumed electric power.

II) The ration is not enough for heavy physical exertion, and so called labour movement deteriolate the will of labourers to work.

III) We are supplying electric power for the factories, which are now changing their productive process, so that such a supply cannot cause the production at present.

IV) To promote agricultural production, demand of electricity for the use of irrigation, sewerage and threshing increased, in addition to it, in order to cover the shortage of fuel oil, it has spread to electrity the agricultural moter power.

Although we must try, with all of our effort to curtail the abusement,

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but at the present circumstances of Japan, it is hard to cut or revise such an inefficient demand of electrify, so that, for the present, decrease of supply of electric power by reparation makes it difficult to secure the lowest standard of national life.

Actual Production of Essential Mining and Industry in CHUGOKU DISTRICT

Month	Coal	Ammonium Sulphate	Rayon and Staple fiber	Cement
	Kg.ton	kg.ton	lbs.	Kg.ton
Oct. 1945	18,541	336	---	4,027
Jan. 1946	80,813	1,495	---	4,863
Apr.	131,127	3,879	714,250	14,579
Jul.	139,333	4,213	1,049,010	22,156
Aug.	127,034	5,098		21,912

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THE EFFECTS OF THE REMOVAL OF THE STEAM POWER PLANTS, WHICH ARE SPECIFIED FOR REPARATION, UPON THE INDUSTRIES,

- EXPLANATIONS ABOUT THE TABLEI-

(PREPARED BY G.E.S.CO., ~~[illegible]~~ OCT., 1946)

Without the five steam power plants, which are Specified for reparation, we can not cover the demand of electricity throughout the year, except the two, months of April and October. The minimum Supply is during Winter. January and Febuary, during Summer, is June and August.

The shortage in January will be 92,000K.W. in 1947, and 95,000K.W. in 1948. In order to tide over this shortage, there is no way left but to curtail the supply for general industries about fourty percent, and for the most important industries twentyfive percent. Under such conditions, the "general industry" works are obliged to rest once every two days. Not only that, we are also inable to supply enough electric power for the use of occupation troops.

If such a condition should continue for a considerably long time, the productivity of coal must decrease to the half, and consequently productivity of the chemical fertilizer decreases, and the little supply of provisions must inevitably go down more and more.

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~~All most all the industries are. In~~

~~at~~ Almost all the industries are in danger of bankrupt, and may cause social disturbances and severe labour problems.

The effects of such a shortage of electric supply upon the most important in dustries in the Chugoku district, will be tablated soon, and you will receive it in near future

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Table I PROSPECT OF THE FUTURE LIMITATION OF ELECTRIC DEMANDS.

Month.Year	Most Important Industries (Big Consumers)	General Big Consumers	Small Consumers Cooking Heaters and Electric Lamp-	Limitation of Total Demands
	%	%	%	%
Nov. 1946	0	10	10	11.4
Dec.	0	15	15	1.8
Jan. 1947	25	[illegible]	40	35.7
Feb.	20	30	30	27.7
Mar.	0	15	15	8.5
Apr.	0	0	0	0
May.	10	20	20	17.4
Jun.	10	25	25	19.0
Jul.	0	15	15	9.5
Aug.	15	30	30	24.7
Sep.	0	15	15	9.1
Oct.	0	0	0	0
Nov.	0	20	20	12.7
Dec.	0	15	15	11.5
Jan. 1948	20	35	35	32
Feb.	20	30	30	25.1
Mar.	0	10	10	8.4

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9

SOME EXPLANATIONS ABOUT THE GAPS BETWEEN THE FIGURES, WHICH WERE INDICATED ON THE WRITTEN APPLICATION OF THE RELEASE OF SPECIFICATION FOR REPARATION, CONCERNING THE STEAM POWER PLANTS SUBMITTED TO S.C.A.P. BY THE CENTRAL GOVERMENT, AND THE FIGURES UPON WHICH THE LOCAL AUTHORITIES HAVE MADE OF OUR POINT OF VIEW

Prepared by J.E.G.T.CO., C.E.S.CO.,

Oct.,1946

Concerning the future prospect of the conditions about the supply and demand of electricity of the Chugoku District, there is a gap between the figures, upon which the central government prepared the written application on the release of steam power plants from the specification for the reparation, and upon which we have explained you the actual conditions of our district. We must account for the grounds, Why do they not coincide each other, and we beg you togive credit in our figures, The written application of the central government takes it for granted, that in February the power out-put by the steam power plants reaches it's maximum. Indeed, Japan as a whole, it may be so, but in the Chugoku District, in January waterquantity decreases much more than in February. Therefore, in order to examine the necessary out-put by steam power plants, at least in the Chugoku District, we must argue upon the

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actual conditions of supply and demand of electricity in January.

On the following table, we will compare the both presumed figures concerning the supply and demand of elecricity in February 1947.

		Central Government	Authorities in the Chugoku District
(A) Total Demmand in the Chugoku District		255,000 KW	260,000 KW
Hydraulic Out-put Power	(B) By Natural water flow	138.000 KW	128.000 KW
	(C) By Reservoir	27.000 KW	30.000 KW
(D) Power to be Received from the other District		* -35.000 KW	0 KW
(E) Possible out-put by Steam Plants		53.000 KW	30.000 KW
(F) Total Supplicable Power		183.000 KW	188.000 KW
(G) Insufficient Power		72.000 KW	72.000 KW
(H) Necessary out-put by Steam Plants		125.000 KW	102.000 KW

Note; * Supply for the Kyushu District.

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We will justify our point of view as follow.

(A) The Total Demand in the Chugoku District.

The cintral government has presumed that the total demand in the Chugoku district will be 255,000 kW but our presumption is 260,000 kW the onemight have presumed it upon the materials of out-of-date, the other have counted it upon the actual load of 239,000 kW during August and Septemaber of this year (1946), and presumed increase of demands, which may surely appear among, the industries, by the extention of their works so far as permitted during this year.

(B) Hydrauilic Out-Put Power

By Natural Water Flow.

About the out-put power by the natural water flow, the central government used the average amount of the past ten years, (194,000 kW by the Japan electric generation and transmission Co, and 44,000 kW by the Chugoku Electric Supply Co.) but we have shown the average amount of the past three years. Owing to the disafforestation during the war, water capacities of rivers, at present, had changed beyond our imagination. So we think thatthe average amount of the past three years can show the present condition for better than that of the past ten years.

(C) By the Reservoir.

The capacity of our reservoir can be converted in the electric power of 33,000,000 kWH. the central authority intends to take advantage of the capacity for a considerably long time and have presumed the reservoir output will be 27,000 kW. But local authorities, it is natural that they

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know better the local characteristics, believe that our reservoir can put out 30,000 kW. and we insist on that our plan is more rational than that of the central.

(D) The Power to be Recievod from Other Districts.

The cental government takes it for granted that the Chugoku District, can afford to supply 35,000 kW of power for the Kyushu District, but we insist upon that there is no such a surplus power left in our district. In the dry and frozen seasons., the supply of electricity decreases every where, and when the steam power plants should be taken away for reparation, the scarcity of electricity becomes more than ever all over the country.

If we are obliged to supply for the Kyushu District, we must be compensated it from the Kinki District. When this compensation should be impossible, our conclusion is just the same as we have so often repeated. We have no surplus electricity to supply for other district.

(E) The Possible Out-Put by Steam Plants

Under this item, the central government presumed 5x,000 kW. but our presurption is 30,000 kW., and the gap between these two figures is not small. Why do they not coincide with each other?

We suppose that the contral presumption may be done upon the circumstances of last frozen season. But the circumstances have changed during past nine months. On the first place, the reparation work delayed far behind as we have expected, because of the lack of necessary materials. And the next, during last summer, the rainfall was extraordinary scarce, and we were obliged to set in motion our steam

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power plants for a considerably long time, and it has also interrupted the progress of reparation work. Considering the actual capacity of our steam power plants, and the possible out-put by repair of them, it is impossible to expect so much out-put as 53,000 kW., which the central authorities have presumed, we think that maximum out-put capacity by steam power plants is 30,000 kW.

(F) The Total Suppliable Power.

(G) The Insufficient Power.

(H) The Necessary Out-Put Steam Power Plant.

These items can be calculated upon the figure, which we have indicated and explained under the items, (A).(B).(C).(D) and (E), so you may be able to see, Why the figures can not coincide each other. The methods of estimation are as follow,

F= B+C+D+E

G= A-F

H= E+G

In conclusion, as we have so often repeated, in the Chugoku District, the supply of electricity can not meet the necessary minimum demands of our district, not to speak of the demand of the Chugoku District.

When all of the steam power plants, which are specified for reparation, should be carried away, the shortage of electric supply would be 92,000 kW in January 1947, and 95,000 kW in January 1948. In order to maintain and promote the industries so far as already permitted extents and to secure the stability of national life, there are no way left but to conpensate the above mentioned shortage of electric supply, by the out-put power of Onoda, Saka, Sanban and Matsue

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Plants. So we can not help but asking your strong recommendation to release \those four steampwer plants from the reparation.

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SOME REMARKS ON THE POSSIBLE OUT-PUT 152,000 k.w. OF THE STEAM POWER PLANTS IN THE CHUGOKU DISTRICT WHEN THE IMPROVEMENTS WILL BE ACCOMPLISHED.

We have reported that the possible out-put of our steam power plants will be 152,000 k.w., when the necessary repairs are accomplished and enlargements, especially two turbine generators, three boilersand coal yards of Onoda Plant will be started. But for the time present, Onoda Plants equipments are one turbine generator and two boilers, therefore total possible out-put of our district can not be reached higher than 1=7,000 k.w.

There are three main reasons to account for that the total possible out-put 137,000 k.w. lies far behind the total authorized out-put 264, 200 k.w. We will explain the each them as follows.

1) Superannuation of the equipments of the steam power plants.

All the equipments of steam power plants of Ihonosho Nima Onomichi, Maeda and Ube Nishi and some parts of the equipments of Ube and Saka plant are superannuated. The efficiency of this plants is very low, and supplied with the standard adequated coal there is no hope to attain the authorized out-put.

2) Loss of the equipments of the steam power plants.

In consequence of the over-work during the war, the loss off the equipments of all steam power plants were considerably great. But the most of the losses may be repaired easily except those of Ube and Saka plant. For the two plants above mentioned, it is necessary

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economize tubes,
to exchange water tubes, super heater tubes, mill-gears, stokker-gears and motors. But under the present condition of the materials supply of our country it is very difficult to get such a equipment so we most wait for a considerably long time. When the repair of all the steam power plants should be accomplished, and the standard adequate coal (the Kyushu coal of more than 6,000 caloric value and Ube coal more than 3,600 caloric value) shoued be supplied, the maximum possible out-put may be estimated as about 227,500 k.w. and it shows about 86% of the authorized out-put. The details of which may be seen on the following table,

Names of Plants	out-put after Repair	Authorized out-put	Names of Plants	Out-put after Repair	Authorized out-put
Sanban	k.w. 51,500	k.w. 51,500	Ube nishi	k.w. 13,000	k.w. 14,000
Onomichi	9,500	10,500	Onoda	15,000	15,000
Saka	52,500	54,200	Maeda	16,500	23,000
Matsue	12,000	14,000	Nitta	7,000	10,000
Ube	30,000	60,000	Ihonosho	500	1,250
			Total	227,500	264,000

3) Degeneration of the supplied coal.

Till the Year of 1937, we were supplied with the Kyushu coal of 6500 carolic value and the Ube coal of 3,600 carolic value. Since then, the coal-seam became exhausted day by day, and during the war qualities of coal degenerated so low as Kyushu coal of 5,500 carolic value and

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Ube coal of 3,200 carolic value and at present it maintains hardly an a-arctage of Kyushu coal of 5,200 carolic value and Ube coal of 3,000 carolicvalue. The reason for such a degeneration is mainly the superannuation of the coal mines, but as a secondary reason, we can not neglect the unsuitable equipment of selection and washing of the coal.

The supply of the coal of better quality, connot be expected for the steam power plants, the effects of low quality coal is relatively less in the steam power plants than in other factories, and so it becomes more and more hopeless to secure the suitable coal for the use of steam power plants.

As we have explained above, the coal which we are now supplied with is so degenerated as 80% of its standayd caloric value, so the capacity of evaporation decreases so much as 70%. Beside that bad conditions of moisture, fineness of granulate degree and ash content appear. and capacity of evaporation must go lower and lower.

To conclude even if the repairs should attain possible maximum degree, of efficency, the steam power plants of our destrict can not attain higher possible out-put than 1,7,000 k.w. for the present.

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No. 11.

To What Extent Decrease the Productions of Important Industries, when the Five Steam Power Plants should be Carried away?

(Oct., 1946)

As we have already stated in the pamphlet No. 8, in the Chugoku district, without the five steam power plants, specified for reparation, we cannot cover the total demand of electricity throughout the year, except two months of April and October.

In order to tide over the shortage of out-put power, we are obliged to limit the consumption, and the rate of limitation is shown on the appended Table I.

The appended Table II shows some examples, how the productions decrease under such a limitation of electric supply. The limitation rate for the small consumers shown on the Table I, is just the same with that of for the big consumers, but in this case, some important demands, for which the supply of electricity can not limit so strictly, are included under the item of small consumers. So in reality, figures under the item of big consumers should be increased and on the contrary figures of small consumers should be approached to that of total demands.

So that the decreasing rate of the production of important goods should be greater than the figures shown on the Table II.